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PLANNING, HOUSING & PUBLIC UTILITIES



Nationalization of Electricity in Great Britain

R. H. Coase

Agrarian Unrest in China

Chee Kwon Chun

Petroleum Pipe Line Transportation

Hugh N. Emerson

Czechoslovakia's Law on Subdivision

Raleigh Barlowe

***Road to Survival* (Vogt) reviewed by**

Karl Brandt

Also

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VOLUME XXVI, NUMBER 1

FEBRUARY 1950

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VOLUME XXVI
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The Nationalization of Electricity Supply in Great Britain

By R. H. COASE*

The Background of the Nationalization Scheme

THE electricity supply industry in Great Britain passed into the hands of the State on April 1st, 1948, and private enterprise in that industry was extinguished. But it would be wrong to think of the nationalization scheme primarily as a shift from private to public enterprise. There was already a considerable degree of public ownership and control in the industry. Although the generating stations were owned and operated by various independent undertakings (public and private), the "selected stations," which generated the great bulk of electricity publicly supplied, operated under the direction of the Central Electricity Board (established in 1926) which also acted as wholesaler of electricity and was in charge of the inter-connecting grid system.¹ Furthermore, local authorities (including the Joint

Electricity Authorities) played an important part in both the generation and distribution of electricity. They comprised in number about two-thirds of the authorized undertakings. And they generated and distributed about 60 per cent of the electricity supplied by authorized undertakings.² As important as the extinction of private enterprise was the disappearance of local public enterprise.

There can be little doubt that there would have been a reorganization of electricity supply whatever government had been in power at the end of World War II. There was a wide-spread belief that the area of distribution of many or most undertakings was too small and that there was too great a variety both in the method of computing and in the level of electricity charges. Furthermore, there was an important practical reason for carrying out a reorganization at that time. In the late 1930s and in the 1940s a large number of the private undertakings became subject to compulsory

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¹ For a description of the part played by the Central Electricity Board in the organization of electricity supply in Great Britain, see Melvin G. de Chazeau, "The Rationalization of Electricity Supply in Great Britain," *Journal of Land & Public Utility Economics*, August and November 1934.

² This excludes electricity generated by railroads and transport undertakings and by power stations in factories and collieries.

purchase by local authorities.³ Since many electricity supply companies operated in the areas of several local authorities, exercise of these rights by the local authority would have resulted in the subdivision of many of the existing privately-owned undertakings; a result which would have been the opposite of what was generally considered to be desirable. It was possible to take measures during the war to postpone the compulsory purchase dates but it was clear that a definite decision about the future of the industry would have to be made at the end of the war. Even apart from the question of distribution, there was also some dissatisfaction with certain features of the 1926 scheme for electricity generation, particularly the dual control of the "selected stations" by the operating authority and the Central Electricity Board. A number of proposals for the reorganization of the industry were being actively discussed at the end of the war by the various bodies connected with the electricity supply industry. There was thus every reason to expect a reorganization of the industry at the end of World War II. But when the Labour Party, which was committed to the nationalization of electricity supply, won the general election in 1945 the form that the reorganization would take became certain.⁴

In this article I propose to discuss three aspects of the nationalization scheme which are likely to be of interest to economists: the problem of compensation, the organization of the nationalized industry and the determination of prices.

³ Many private undertakings became subject to compulsory purchase by local authorities after they had been in operation for 42 years.

⁴ For a history of the electricity supply industry in Great Britain and a survey of the position as it existed at the end of World War II, see H. H. Ballin, *The Organization of Electricity Supply in Great Britain* (1946).

The Problem of Compensation

I shall first consider the assessment of compensation in the case of the companies.

It is basic to an understanding of the scheme for compensation to realize that in nationalizing the industry, the State did not simply take over the assets of the various companies: it also abolished the companies (including the holding companies).⁵ Therefore, the problem of compensation was seen by the government to be one not of valuing the assets which were compulsorily acquired but of assessing the compensation to be paid to the holders of the securities of the companies which ceased to exist.

The solution to this problem adopted by the government was to give the holders of the securities of the companies at the "vesting date" (the date at which the State took over the electricity supply industry), an amount of British Electricity Stock equivalent to the value of the securities in either the first week of November 1946 or certain dates in the period February to July 1945 (the period in which the value was higher being the one chosen). The values for these periods were calculated by averaging the Stock Exchange quotations for the dates concerned. In the case of securities for which there were no Stock Exchange quotations, the values were to be determined (by agreement or by arbitration) by reference to the most nearly comparable securities for which there were Stock Exchange quotations.

The reasons why the government adopted this method of computing compensation were given in Parliament by Mr. Shinwell, then Minister for Fuel and Power. He said that the companies were

⁵ This was not true of all the nationalization schemes. For example, when the coal mines were nationalized, the colliery companies continued to have a legal existence after nationalization.

almost all operating on a limited franchise and were subject to compulsory purchase by the local authorities on terms set out in the Electricity Acts.

"The House must appreciate that the problem of determining the value of those assets is almost unexampled in its difficulties. A company might be operating on 20 franchises which could be bought out by 20 different local authorities at 20 different dates. It would be necessary to determine the value of that particular portion of the company's assets which could be attributed to each franchise. To separate a portion of the assets of an integrated undertaking and then value that portion is very difficult, if not impossible . . . there would have to be made a series of calculations of net maintainable revenue for each portion of the company's undertaking for the period during which the franchise for that portion would operate. I am satisfied that the work of calculating all this in relation to hundreds of portions of companies would be so involved that it is quite out of the question as a practicable proposition."

The Conservative Party argued that these difficulties were much exaggerated. But the government maintained their point of view. Mr. Hall, Financial Secretary to the Treasury, said that any direct valuation of assets "would mean . . . extremely lengthy proceedings" and he added "that would be bad for all concerned and it would involve the use of technical staffs for many months, which we cannot for a moment contemplate."

But an immediate difficulty arises if share values are to be used as a basis for compensation. The Stock Exchange quotations after the 1945 General Election would take into account the fact that the electricity supply industry was almost certain to be nationalized, and would therefore reflect the market's view of what the compensation terms were likely to be. To accept these quotations as a basis for compensation would mean that the government would give investors

what the Stock Exchange thought it might give. It was these considerations which led the government to propose that, as an alternative to the quotations in the period just before the introduction of the Electricity Bill, quotations in the period before the 1945 General Election could also be used, since at that time the victory of the Labour Party and therefore the nationalization of electricity supply was generally thought to be most improbable.

But the choice of an earlier date, if it avoids some difficulties, certainly creates others. If compensation is defined as a payment sufficient to leave the dispossessed owner of property feeling as well off as before the compulsory transfer of his property, owners will not be compensated if, after the date of valuation and before the transfer of the property, there is a change in the general level of prices or in the rate of interest. The Conservative Party, in criticising the compensation scheme, concentrated attention on the change in the rate of interest. Before the 1945 General Election the rate of interest on government securities was higher than it was in 1947 when the debate on the electricity bill took place. The yield on 2½ per cent consols was about 3 per cent in the first half of 1945; in the beginning of 1947 the yield had fallen to a little over 2½ per cent. If in 1945 investors had been given an equivalent value in government stock, they could (if they wished) have sold the government stock and bought other securities of a similar kind to those of which they were dispossessed and giving them a similar yield. But if these same investors were given in 1948 an equivalent value of government stock (the rate of interest having fallen), since the value of other securities will have risen to reduce the yield to correspond with the lower rate of interest, they would be unable to regain

their former income even if they sell their government stock and therefore they will not be compensated. This argument (which I believe to be valid) was either rejected without any detailed counter-argument by government speakers during the debates in Parliament or was dismissed as "hypothetical" since it was not known what the rate of interest would be on the "vesting day."

The movements in interest rates did in fact have some rather odd consequences. After the formation of the Labour Government, and as part of a deliberate policy, interest rates moved downwards. The result was that, in spite of the nationalization threat, many electricity supply securities were quoted at a higher figure in November 1946 than in the first half of 1945 (the alternative dates allowed for the valuation of the securities in the Electricity Act). Of the 117 securities of companies which were quoted on the Stock Exchange in both these periods, the value was higher in the 1945 period in 50 cases, was higher in the 1946 period in 68 cases, and was equal in the remaining 9. But this was not all. We now know (what could not have been realized at the time) that the period when the electricity bill was introduced marked the lowest point to which interest rates were to fall and that thereafter, somewhat reluctantly, the government were to allow interest rates to rise. They continued to rise until April 1948 (the "vesting date"), when the yield of $2\frac{1}{2}$ per cent consols had risen to about $3\frac{1}{4}$ percent. Thus, instead of there being, as some Conservatives had feared, an undercompensation as a result of interest rate changes, it so worked out that investors whose securities were valued on the basis of a 3 to $2\frac{1}{2}$

percent interest rate, were compensated on the basis of a $3\frac{1}{4}$ per cent interest rate—which would, of itself, lead to overcompensation.⁶ The view that it was "hypothetical" to argue that undercompensation would occur was therefore fully justified by the events, although it is difficult to believe that what happened was what the Labour Government had expected.⁷

Two objections of a general character were made to using Stock Exchange quotations for assessing compensation, irrespective of the date chosen. The government argued that the Stock Exchange quotations give the values which willing buyers and willing sellers have put on the securities and were therefore quite fair. But the opposition contended that the great majority of the holders of electricity supply securities were not willing sellers and that they had no intention of selling at the prices ruling on the Stock Exchange on the dates concerned. It was argued that if one large buyer had attempted to buy sufficient shares to obtain control of the various companies, the price of the shares would have risen.

It is obviously true that most investors are not on the margin of selling and must therefore be presumed to value their securities at more than the market price. The question is: how much more and what does it depend on? If there are other securities of a similar type available, the value placed on the particular securities cannot be greater than the price at which these others can be obtained plus some allowance for the trouble and expense of making the transfer. But since new funds are constantly coming forward for investment, it seems unlikely that the quotations of similar types of security

⁶ In fact, the electricity stock was issued at par and bore an interest rate of 3 per cent; but, to have as low an interest rate as this, it was necessary to make the stock redeemable in 20 to 25 years. Even so, the stock opened at a slight discount of 1 to $1\frac{1}{2}$ per cent on the Stock Exchange—which indicates that the Treasury had cut the rate a little too fine.

⁷ It is interesting to note that the Conservative Party amendment which was rejected by the Government would have prevented not only under-compensation but also overcompensation as a result of changes in the rate of interest.

on the Stock Exchange will differ very much. Therefore, the maximum amount by which the value placed by investors on their own securities could exceed the Stock Exchange value would be the monetary equivalent of the costs of transfer (including the psychological costs)—assuming that securities of a similar type are available. Of course, if securities were available at the same price which were preferred by the investors, the amount by which the value placed by investors on their holdings would exceed the Stock Exchange quotation would be less than the costs of transfer. And, which is practically of more importance, if no securities were available at the same price which were as satisfactory from the investors' standpoint, the value which they will place on their securities will exceed the price at which they are quoted on the Stock Exchange by an amount greater than the costs of transfer.

If we apply this analysis to the electricity supply nationalization scheme, we can say that compensation on the basis of Stock Exchange quotations would certainly under-compensate (other things being equal), the magnitude of the under-compensation depending on the costs of transfer and whether similar securities were available at the same price. Since all electricity supply securities were taken over (and this has been accompanied by nationalization of the other public utilities), it is most improbable that investors could find similar securities available at the same price and therefore it is likely that the amount of under-compensation was greater than the cost of transfer.

The other general objection raised against the use of Stock Exchange quotations was that the value of the securities of a company on the Stock Exchange is often (or usually) lower than the value of the assets of the company because the value of the assets of a company reflects

the profits earned while the value of the securities reflects the dividends paid and only partially that part of the profits which are reinvested in the enterprise in so far as this affords greater security to the investor and (to the extent that this is legally possible) gives hope of larger dividends in the future. This is probably an accurate description of the existing state of affairs. It results from the divorce of ownership and control in modern company organization. Investors are not individually free to decide how much of their share of profits they would like to reinvest: and in fact reinvestment takes place on a scale which is greater than would be the case if investors could exercise more effective control over the disposal of their money. It means that, when an industry is nationalized, it would be possible for the Government fully to compensate investors and yet obtain assets the income from which is greater than they are called upon to pay out to the dispossessed investors. It helps to explain why the Conservative Party speakers, in the debates in Parliament, urged that since the assets belonged to the companies, compensation should be paid to them and not to the share- and stockholders. In the form in which it was raised in the debates, this argument appeared to be legalistic. But it raises important issues since the present position is one which gives an added incentive for nationalization schemes: and if it does not guarantee the financial success of a nationalization scheme, none the less, makes it easier to obtain. It is yet another example of the difficulties which result from the dominance in our economy of the modern joint-stock company.

In my view, the method of assessing compensation in the electricity-supply nationalization scheme was extremely faulty. At the time, it looked as if it would lead to under-compensation, al-

though, owing to subsequent changes in interest rates, it may not have done so, at any rate, in all cases.

The arguments on which I base this conclusion were all rejected as invalid by the Labour Government. But the conflict of opinion is perhaps less than it appears. Mr. Shinwell included in his speech in the initial debate in the House of Commons a criticism of the regulation (or want of regulation) of electricity supply companies. This, he argued, had enabled them to earn excessive profits, and he was particularly critical of the activities of the holding companies (or of some of them). At the end of this section of his speech he said:

"In all the circumstances, compensation on the basis of market value must be regarded as generous. It is also fair to the purchaser because, as I have said, some limitation on the profits taken from the electricity consumer was long overdue, and the companies were uneasily aware of that probability. It is not unreasonable, therefore, that compensation should entail a reduced income to the existing shareholder. Had the basis of compensation provided shareholders with an income as great as they enjoy at present, the Government would have found it necessary to propose a scaling down of market value."

It seems probable, therefore, that the Labour Government having discovered a method of compensation which could be broadly defended as fair was not overly concerned that, as it seemed likely to work out, it would lead to investors being worse off than before.

It has to be admitted that the regulation of public utilities is a continuous process and that some adjustment of the profit which undertakings can earn is, from time to time, desirable. But there is no reason to suppose that the arbitrary under-compensation involved in the use of a faulty method would be right in total or would fall with justice on the investors in the various concerns. Not all of them,

probably, were earning profits which were, in the circumstances, excessive; and for those that were, the extent of such excessive profits must have varied considerably from company to company. Of course, I do not mean to imply that I accept Mr. Shinwell's view that profits were excessive, although it may be that this was the case. To learn whether that was so, it would be necessary to have some kind of independent investigation. And this was something which the government clearly had no intention of instituting. The only conclusion that can be reached is that, if all investors were compensated (and not over-compensated) taking into account the fact that some profits may have been excessive, it would have been the result of a most improbable series of coincidences.

I now turn to the problem of compensation in the case of public authorities. Public bodies, such as the Central Electricity Board or the Joint Electricity Authorities were treated in exactly the same way as the ordinary joint-stock companies. That is to say, they were dissolved and the holders of their securities were given an amount of British Electricity Board stock, based on their value in either the pre-election period or in November 1946. The same criticisms apply to this case as to the compensation scheme for investors in the securities of the companies. But it could be argued that investors in the securities of these public bodies were worse off than those who invested in private companies since presumably they were not the recipients of excessive profits in the preceding years.

But the great bulk of the assets taken over from public authorities belonged to local authorities: and the question of how they should be treated for purposes of compensation raised many interesting problems. Mr. Shinwell, in his speech in the initial debate, said:

"The transfer of undertakings from the local authorities to the new organization set up by the bill is a transfer from one form of public ownership to another. Local authorities have always displayed a sense of public duty and will not wish to make any profit from the transaction. I propose, therefore, that the basis of compensation to the local authorities should be the transfer of their assets and liabilities to the new Boards. That will mean that the new Boards will have to service the net outstanding debt of the local authorities attributable to their electricity supply undertakings. I am fully aware of the fact that the net outstanding debt in the case of local authorities is less than the capital expenditure of the undertakings transferred. In other words, the consumers in the areas of those local authorities who own electricity undertakings have already made their contribution towards the reduction of the outstanding debt on the undertaking. If the local authority were compensated for the difference between the net outstanding debt and the capital value by the Central Authority, the total amount of compensation would be increased and the electricity consumer would, in fact, be asked to pay again what he has already paid. I cannot see the fairness of such a suggestion."

This rejection of the claim by municipalities for compensation brought many protests. Three main reasons for compensating local authorities were advanced: (1) to compensate for the loss suffered by those local authorities which had used part of the profits of the electricity undertaking for other municipal purposes: (2) to compensate those local authorities which had used part of the profits of the electricity undertaking to pay off loans to such an extent that the liabilities were less than the value of the assets: and (3) to compensate local authorities for the additional expense in other departments which would result from the loss of the electricity undertaking. I shall consider each of these in turn.

(1) Some 20 per cent of the municipal electricity undertakings made contribu-

tions out of their profits to general municipal funds. Rate-payers (local taxpayers) in these areas would find, unless the municipality cut down its activities, that the amount they would be called upon to pay would be higher than before nationalization. But, in my view, the argument for compensation cannot be sustained. I do not wish to maintain that none of the profits of a municipal undertaking ought to be applied to general municipal purposes. The rate-payers are assuming a risk (although perhaps a small one in the case of electricity) and they should be rewarded for doing so.⁸ But it is clear that the risk disappears with the loss of the undertaking and therefore, on these grounds, there is no case for a continuance of a contribution to the general funds. Of course, an amount over and above this was probably levied. If this was so, in the future an increased tax on real property will be substituted for a tax on electricity consumption: and it is not clear that this will necessarily be worse for the inhabitants of that locality.

(2) I shall attempt to set out the problem in terms which will avoid discussing how it is possible to derive the capital value of the assets of a municipality. Broadly, what has happened is that consumers in certain localities have in the past paid higher electricity charges than others in order to reduce the indebtedness of the undertaking and this would have resulted in the consumers in these localities, where the indebtedness was reduced to zero, paying less than those in other localities. The effect of nationalization is to prevent the second stage from occurring (or from continuing when it had been reached). The relative advantages, which consumers in those areas would have possessed, will no longer be

⁸ See Edwin Cannan, "Ought Municipal Enterprises to be Allowed to Yield a Profit," *Economic Journal*, March 1899. This article was reprinted in *The Economic Outlook*, pp. 157-171.

theirs and the benefit of the reduced indebtedness will, under the nationalization scheme, accrue to all consumers, wherever situated. If there were no substantial change in the composition of the populations of the various areas, the claim for compensation would appear to be undeniable. Mr. Shinwell's argument that "the electricity consumer would, in fact, be asked to pay again what he has already paid," misses the point. Certain groups of consumers would have returned to them the additional payments they had made in the past since they will no longer be charged in the future lower prices than the rest of the consumers. Of course, to the extent that the population has shifted from one area to another, it becomes impossible to discover who made the additional payments; and compensation paid to inhabitants of particular areas will benefit some of the undeserving while failing to compensate some of the deserving. Also, it cannot be assumed that any payment made to municipalities would necessarily be used for the benefit of electricity consumers or distributed among them in accordance with past consumption. In these circumstances, it can, I think, be argued that any compensation scheme would do more harm than good. But the case against compensation was not argued on these lines.

One result of the attitude of the Labour Government to this question will be that local authorities in the future will be much less inclined to put charges for the services they continue to supply at a level which enables them to pay off their indebtedness at a rate greater than the depreciation of their assets. This constitutes, in my view, a gain since consumers would almost certainly prefer to have the lower prices rather than make what can accurately be described as a "forced" loan to the undertaking. This

policy is the counterpart in the municipal field of that found in joint-stock companies in which shareholders are made to invest more in the undertaking than they would do if the decision were left to them.⁹

(3) The Labour Government was originally opposed to all compensation for local authorities. But, after the initial debate in the House of Commons, the municipalities made representations to Mr. Shinwell and he decided (I believe rightly) to amend the proposals in one respect: it was agreed to compensate local authorities for the additional expense in other departments which would result from the loss of the electricity undertaking. This was termed "compensation for severance." The main constituent was the loss of the contribution made by the electricity undertaking to the overhead expenses of the municipality. It was decided that £5 million (which would be a charge on the nationalized industry) should be set aside to compensate local authorities. This sum was apparently derived in the following way. It was estimated that the additional costs to the local authorities would be of the order of £1 million per annum. It was also thought that the local authorities should be able to adjust their organization within five years so as to reduce expenses due to severance to negligible proportions. The division of the £5 million was to be made by the Minister after consultation with the local authorities. With the information available, it is, of course, impossible to assess the adequacy of the compensation.

The Organization of the Nationalized Industry

The organization of the nationalized industry is built around the Minister of

⁹ Of course, to the extent that municipalities adopt the policy, not of reducing prices but of increasing municipal expenditure, the gain will be reduced and may even be offset.

Fuel and Power, the British Electricity Authority, the Area Boards and the Consultative Councils. The Minister is responsible for the general policy of the industry; the British Electricity Authority is responsible for the generation of electricity and, under the Minister, for the general policy of the industry; the Area Boards are responsible for the distribution of electricity; while the Consultative Councils are, broadly speaking, representative of consumer interests.

The key position of the Minister is evident if we consider how the personnel of the Authority, the Area Boards and the Councils are chosen. The members of all these bodies are appointed by the Minister. He is, of course, circumscribed by the terms of the Act both as to the number of members of each of these bodies and also as to who is eligible for appointment. The Authority is to consist of a Chairman and either nine, ten or eleven other members. The Chairman and not less than four or more than six other members are to be appointed by the Minister "from amongst persons appearing to him to be qualified as having had experience of, and having shown capacity in, the generation and supply of electricity, industrial, commercial or financial matters, applied science, administration, or the organization of workers." In addition, four members are to be appointed from among the

Chairmen of the Area Boards and "such appointments shall be made from Area Boards in rotation." An additional member will be the Chairman of the North of Scotland Board."¹⁰

The fact that the members of the Area Boards are appointed by the Minister and not by the Authority has been the subject of criticism. The defense for this provision has been that it is due to and also serves to emphasize the autonomous character of the Area Boards. The Chairman of each Board and not less than five or more than seven other members are to be appointed by the Minister "from among persons appearing to the Minister to be qualified as having had experience of, or having shown capacity in, electricity supply, local government, industrial, commercial, agricultural or financial matters, applied science, administration, or the organization of workers." It will be observed that as compared with a similar provision governing those eligible for the Authority, reference to generation is omitted and experience in local government or agriculture is added as an acceptable qualification. In addition to these, the Chairman of the Consultative Council for the Area is also to be a member of the Board. The number of these Area Boards and also their area is determined by the Minister.

A Consultative Council is to be established for the area of each Area Board. Each Council consists of not less than

¹⁰ The North of Scotland Hydro-Electric Board was established in 1943 to develop the waterpower resources of that region. Its functions were wider than those ordinarily associated with electricity supply. It was to co-operate with other organizations in the development of the Highlands and was to use the profits realized from the sale of its electricity to the Central Electricity Board to provide electricity to areas in the Highlands which were so costly to supply that the receipts from the consumers would not be sufficient to cover the costs. When the decision was made to nationalize the electricity supply industry, it was decided to make the North of Scotland Board responsible for distribution as well as generation and to enlarge its area to include such places as Dundee, which were previously excluded. This will mean that it will now operate some steam generating plants. The Board is for all practical purposes an independent body outside the main nationalization scheme. The members of

the Board are appointed jointly by the Secretary of State for Scotland and the Minister of Fuel and Power. The Secretary of State for Scotland is responsible for the general policy of the Board and the prices which it charges are also subject to his regulation. The British Electricity Authority does not come into the picture except that it has to approve the construction program of the Board. But even in this sphere the Board could, if it wished, appeal to the Secretary of State against any decision made by the Authority. The prices charged by the North of Scotland Board for its surplus electricity which it supplies to the British Electricity Authority are to be determined jointly by the two Ministers. In this article, my description of the nationalization scheme will exclude the operations of the North of Scotland Board.

twenty or more than thirty persons. Not less than a half or more than three-fifths of these members are to be appointed "from a panel of persons nominated from amongst members of local authorities in the area by such associations as appear to the Minister to represent those authorities." The remainder are to be appointed "after consultation with such bodies as the minister thinks fit, to represent agriculture, commerce, industry, labour and the general interests of consumers of electricity and other persons or organisations interested in the development of electricity in the area."

The number of full-time members on any of these bodies is determined by the Minister. At present the full-time members are the Chairman, two Deputy Chairmen and another member (for labour relations) of the British Electricity Authority and the Chairmen and Deputy Chairmen of the Area Boards.

The Minister also occupies a key position so far as the policies to be followed by the industry are concerned. He may, after consultation with the Authority, give it "such directions of a general character as to the exercise and performance by the Authority of their functions . . . as appear to the Minister to be requisite in the national interest, and the Authority shall give effect to any such directions." The intention of the Government in giving these powers to the Minister was explained in Parliament by Mr. Shinwell, who was then Minister of Fuel and Power, in the following words:

"So far as it is possible, it is desirable that these Boards responsible for the administration of a national industry should be independent and autonomous in character, and the less intervention there is from Whitehall the better it is. At the same time the Government are compelled in the very nature of the case, having regard to general policy and with a view to safeguarding the public in-

terest, to exercise independent supervision and vigilance in order to ensure no action is taken by any of these nationalised Boards which is inimical to the public interest."

He gave three reasons why such control over policy by the Minister was required. The first was strategic. The second was to further the Government's economic policy towards the development areas.¹¹ It was envisaged that the Minister might indicate to the Authority that it was desirable to provide electricity supplies in a particular area in order to fit in with the Government's economic policy. The third reason was to control research. It was not intended that the Minister would be concerned with matters of day-to-day administration. The decision whether to install a certain kind of turbo-generator or a certain kind of switchgear or whether the annual staff outing was to be at one seaside resort or at another: these would be examples of matters with which the Minister would not be concerned. But Mr. Shinwell added:

"in process of co-ordination it may be necessary to give one or all of the Boards [of the nationalized industries] some general direction so that there should be no overlapping and no competition—no unhealthy competition. . . . It would be detrimental to the national interest if we had a nationalized electricity industry and a nationalized gas industry fighting each other like cats and dogs in order to attract business. The process of co-ordination will obviously entail the avoidance of overlapping and some elimination of unhealthy competition."

The Minister can also exercise control over the capital expenditure programme of the industry. This has to be settled "in consultation with the Minister." It was stated in Parliament that the need for these powers arose primarily out of the government's employment policy, in which variations in public investment

¹¹ Areas, previously called distressed or special areas, in which unemployment had tended to be abnormally high.

play an important role in maintaining a "high and stable level of employment" and in avoiding either inflation or deflation. But they were also required to facilitate economic planning. It would be necessary to co-ordinate, for instance, the installation of generators with the plans for coal production. It was also argued that these powers would enable the Minister to make sure that adequate provision was made for the expansion of electricity supply in rural areas.

The core of the organization is furnished by the British Electricity Authority. Its primary task is to generate the electricity which it then supplies to the Area Boards. The Authority has power to manufacture electrical plant and fittings (other than for export) but it is not the intention that it shall do so. The aim of this provision is to give the Authority a bargaining weapon if it believes the prices it is being charged for equipment are too high. The Authority has also the task of co-ordinating the activities of the Area Boards. According to the Act, "the Central Authority may give such directions to the Area Boards as appear to the Central Authority to be necessary or expedient for the purpose of co-ordinating the distribution of electricity by Area Boards and exercising a general control over the policy of those Boards, and every Area Board shall give effect to any such directions given to them by the Central Authority." In financial matters the control exercised by the Authority over the Area Boards is very considerable. The Boards have to submit for approval by the Authority estimates of revenue and expenditure. They also have to secure the approval of the Authority for "programmes of development involving capital expenditure . . . and in other cases where it is desirable in the opinion of the Central Authority to secure co-ordination between different

Area Boards in matters involving expenditure."

The Area Boards have the task of distributing to the final consumer the electricity supplied to them by the British Electricity Authority. It is possible for the Authority to delegate to the Boards the execution of certain of its functions and apparently it is considered that it may prove convenient in some cases for the Boards to operate some generating stations. In the first instance there are to be fourteen Area Boards (excluding the North of Scotland Board); but, as we have seen, the Minister has power to alter this number.

The Consultative Councils form a separate part of the organization and have functions which are wider than those of consumers' representatives. They have the duty "of considering any matter affecting the distribution of electricity in the area, including the variation of tariffs and the provision of new or improved services and facilities within the area," either because a consumer or someone requiring electricity has made representations to them or because they consider that it ought to be investigated. When they consider that action is required, the Councils are to notify their conclusions to the Area Board. They also have the duty of considering and reporting upon any matter referred to them by the Area Board. The Councils have power to make representations to the Central Authority and if it appears to the Authority "after consultation with the Area Board and with the Council, that a defect is disclosed in that Area Board's general plans and arrangements . . . the Central Authority may give to the Area Board such directions as they think fit for remedying the defect and the Area Board shall give effect to any such directions." The Councils can also appeal to the Minister if they are not satisfied with the

action of the Authority. And if the Minister considers that there is a defect in the arrangements of the Board, he can require the Authority to give the Area Board the necessary directions for remedying the defect; and the Area Board has to carry out these instructions. Provision is made also for the setting up of divisional committees under the Consultative Council for each Area.

It will be seen that the organization of the nationalized industry is composed of an interlocking structure—the Consultative Councils are represented on the Area Boards and the Area Boards are represented on the British Electricity Authority. Members of all these bodies are appointed by the Minister who has also wide powers to control the policy of the industry. Notwithstanding the contention that the Area Boards are to be largely autonomous, the Authority in fact has considerable powers to control the activities of these Boards. The Consultative Councils are designed to act as both an aid and a check on the Area Boards; and their recommendations, if approved, will have to be carried out by the Area Boards. They are concerned with the distribution of electricity. There is no parallel Consultative Council to deal with the generation of electricity.

It has been possible to give only an incomplete picture of how the nationalization scheme will function. The reason is to be found in the character of the legislation. It is true that the administrative structure is quite clear. But the difference between what the Minister and the British Electricity Authority have power to do and what they are required to do by the Act makes it extremely difficult to forecast what the division of responsibility will ultimately be between the various bodies which constitute the nationalized industry. The Minister has extensive powers to intervene and to

determine the policy of the industry; but how he will use them or even whether he will use them is a matter for conjecture. And this also applies to the British Electricity Authority. It is, of course, impossible to forecast how such a new form of organization as the Consultative Councils will in fact function. It may be that they will do much to promote independent criticism of the industry's policies. But it is my belief that these many large Councils, which are very likely to be inadequately staffed, will lack the ability or drive to institute any thoroughgoing investigations and will rather serve to remove minor grievances and to promote a feeling of harmony as between the industry and the organized consumer and other interests.

Similar doubts apply to the policies of the industry. The policy directives to be found in the Act such as to "promote the use of all economical methods of generating, transmitting and distributing electricity" and to "secure, so far as practicable, the development, extension to rural areas and the cheapening of supplies of electricity" are so general as to be of little help as a guide to the course the industry will follow.

I would like to make one further point on the question of organization. Mr. Herbert Morrison, Lord President of the Council, speaking in Canada at the beginning of 1946, set out the Labour Government's policy in these words:

"Generally speaking, we shall not manage the nationalized industries by State departments or civil servants. We shall, instead, set up public corporations in charge of boards composed of men appointed because they are qualified to do a technical job with efficiency, imagination and enterprise in the public interest."

This is a widely-held view. For almost 20 years, discussion of the problem of the organization of nationalized industries in

Great Britain has centered around the public corporation. This form of organization was certainly not recognized as one of any importance until the late twenties of this century. Since then, the public corporation has come to be accepted as *the* way above all others of organizing a nationalized industry. Dr. Lincoln Gordon has commented: "Perhaps no feature in recent thought in applied economics in this country (that is, Great Britain) is more striking than the rapidity with which it (that is, the public corporation) has gained favour among almost all sections of opinion."¹² The statement made by Mr. Morrison would seem to suggest that the Labour Government is following the prewar trend. But is this so? The characteristics of the prewar public corporations such as the British Broadcasting Corporation, the Central Electricity Board and the London Passenger Transport Board were that they followed the company form of organization, that they were financially self-supporting, that the stockholders had no say in the management but also that they were very nearly independent of a Minister in the formulation of policy. The nationalized electricity supply industry may be said to follow the prewar corporation model in all respects but the last. This difference is significant since it was, above all, this independence from Ministerial control which gave the public corporation its special character. With electricity and transport nationalized, of the three bodies mentioned above only the British Broadcasting Corporation remains to point the distinction. But much depends, of course, on how far the Minister exercises his powers. It remains to be seen how far the nationalized electricity supply industry corresponds to the prewar type public corporation or to

a department of state operating under the direction of a minister.

The Determination of Prices

The responsibility for the determination of prices is placed on the British Electricity Authority. In exercising its powers the Authority is under an obligation to see that the receipts of the nationalized industry cover its costs.

"It shall be the duty of the Central Authority so to exercise and perform their functions under this Act, including their functions in relation to Area Boards, as to secure that the combined revenues of the Central Authority and all the Area Boards taken together are not less than sufficient to meet their combined outgoings properly chargeable to revenue account taking one year with another."

It should be noted that it is not necessary that the receipts of each part of the industry should cover its costs; for example, there is nothing in the Act to prevent one Area Board from incurring deficits over an indefinite period of time. All that is necessary is that the industry as a whole should cover its costs. At first sight, the purpose of this provision might appear to be to allow extra receipts from one district or group of consumers to subsidize another district or group of consumers. It would certainly allow this. But this provision was not advocated on these grounds. Mr. Gaitskell, then Parliamentary Secretary to the Minister of Fuel and Power, and now the Minister, argued that the phrase "taking one year with another" would not allow "a series of deficits over a longish period." But, he explained, "circumstances may exist where an Area Board for perfectly justifiable reasons incurs a deficit over quite a long period." As an example, Mr. Gaitskell pointed out that rural electrification was essentially a long-term investment and that deficits might continue for a considerable period of time. Mr. Gaitskell added that under the Act it

¹² See Lincoln Gordon, *The Public Corporation in Great Britain* (1937), p. 3. Dr. Gordon's book is undoubtedly the best account of the public corporations of the prewar period.

would be possible for the Authority to require each Area Board to cover its costs.

But it would be wrong, I think, to imagine that no deliberate subsidization will occur. It is one of the objects of the Act to develop rural areas and to simplify methods of charge. And there is nothing in the Act to suggest that this should not be done by measures which involved some subsidization of one area by another. There was no suggestion in any of the Ministerial speeches during the debates in Parliament that one of the immediate objects of the nationalization scheme was to secure uniform prices for electricity throughout the country. Indeed, Mr. Shinwell made it clear that costs would have to be taken into account when deciding either whether to supply or what prices to charge. But the substitution of Area Board tariffs for those of the existing undertakings will secure greater uniformity within an area and it remains to be seen whether, in that event, the tariffs of the different Area Boards will vary much from one another. One measure to promote uniformity is envisaged in the Act. One of the purposes for which reserves can be accumulated is to bring about a uniformity of prices *through time*.

I now turn to the determination of the prices which the Area Boards are to charge the final consumer. Each Area Board will fix its own tariff and "it shall be so framed as to show the methods by which and the principles on which the charges are to be made as well as the prices which are to be charged, and shall be published in such manner as in the opinion of the Area Board will secure adequate publicity for them." The Area Board is not precluded from making special agreements with individual consumers but this can only be done "in cases where the tariffs in force are not

appropriate owing to special circumstances." But whether the prices charged are in accordance with the Boards' tariff or the result of a special agreement, the Board "shall not show undue preference to any person or class of persons, and shall not exercise any undue discrimination against any person or class of persons" This prohibition of undue preference is not new; it already applied to existing electricity undertakings. But this provision has not been interpreted in such a way as to unduly restrict undertakings in their tariff-making. There is a special provision relating to the supply of electricity to railroads (which of course have also been nationalized). The amount to be charged for electricity supply to railroads for haulage or traction is to be determined in accordance with regulations made jointly by the Minister of Fuel and Power and the Minister of Transport. But it is specifically stated that the charges should be "such as to avoid financial loss resulting to the Electricity Board from the provision of the supply." This presumably means that electricity will not be supplied to the railroads at less than the additional cost to the electricity supply industry. This provision was inserted at the instance of the Conservative Party, who thought that otherwise there might be hidden subsidies to the nationalized transport industry; subsidies which could be very substantial if there was an extensive scheme of railroad electrification. The amendment was accepted by the Government, Mr. Shinwell giving assurance that there was "no question of subsidies."

What powers has the Authority over Area Boards in relation to the prices which they charge? In determining its tariff, an Area Board may be required to submit it for approval and is also subject to any directions which may be given to

it by the Authority. The Authority "may, if they consider that the tariffs in force in the area or any part of the area of an Area Board ought to be varied or replaced by new tariffs, direct the Area Board to submit proposals for varying or replacing those tariffs, and may approve the proposals so submitted either without modifications or with such modifications as, after consultation with the Area Board, they think fit to make; and it shall be the duty of the Area Board to give effect to any proposals approved under this subsection." Legally, therefore, the Authority has very considerable power to control the prices charged by the Area Boards. But it is the intention that the Area Boards should be responsible primarily for the prices charged to the final consumer and that the Authority should not exercise a strict control over the Area Boards in this matter. Mr. Gaitskell explained in Parliament that it was the Government's view that the Authority "should exercise supervision with a very light hand, and that the greatest possible degree of freedom should be given to the Area Boards." But Mr. Gaitskell said that "there are occasions on which it would be highly inconvenient, and even financially dangerous to the organization if one Area Board were to charge very different rates from those of another in respect to one particular class of consumer." In such a case, the Authority might give directions to the Area Boards. And he went on to give another instance. "We might have a particular industry banding itself together to beat down the Area Boards, and unless the Area Boards stand firm together on this point it might lead to awkward financial consequences. We do not want to leave them in a position where one can be played off against the other." Mr. Gaitskell said that the Government was relying on the Authority "behaving in a

common sense manner in this business. We have put the Chairmen of the Area Boards on the Central Authority precisely in order to deal with any dangers that may arise lest the Central Authority should become too bureaucratic, and should intervene too much."

It was proposed by the Opposition that an independent tribunal should be set up to which the Area Boards should submit their tariffs for approval and to which complaints (whether by Consultative Councils or others) on the price policies of the Boards could be made. Mr. Shinwell, who expressed sympathy with the object of this proposal, nonetheless did not accept it. He gave two main reasons for this. Review of the tariffs of the Boards would be one of the functions of the Consultative Councils and the Government was anxious not to impair their authority or prestige. Furthermore, the British Electricity Authority had the duty of seeing that the industry paid its way; it would make the position of the Authority impossible if tariffs could be determined by a body not subject to its ultimate control. But Mr. Shinwell thought that it might be wise for an independent body to be set up to advise the Minister in the event of a disagreement between a Consultative Council, an Area Board and the Authority.

The price policy which has been discussed so far in this article has related to the prices charged by an Area Board to the final consumer. There are also the prices which the Authority will charge for the electricity which it supplies to the Area Boards. These are to be fixed by the Authority. There is a similar provision to that for the tariffs of the Area Boards to secure publicity not only for the charges but also for the methods by which and the principles on which these charges are based. But in view of the fact that the finances of the industry have

to be considered as a whole and that ultimate control for them and the tariffs of of the Area Boards are vested in the Authority, Mr. Gaitskell was probably justified in stating in Parliament that these tariffs are essentially an internal matter.

It is not easy to comment on the legislation in so far as it concerns pricing policy. It is possible to say that the policy will be such as to make the industry self-supporting over a period of years and to avoid undue preference. In particular, of course, the legislation rules out the adoption of marginal cost pricing, a policy advocated by certain English Socialist economists. But beyond this it is impossible to go.

And events since nationalization do not throw much more light on the pricing policies which the nationalized industry will follow. Immediately after nationalization a decision was made to raise the charges in areas which had been budgeting for a deficit. But even with these changes, it appeared to the British Electricity Authority that the nationalized industry would be likely to incur an overall deficit. It was therefore decided that an adjustment should be made to the domestic tariff in which, unlike the industrial tariffs, there had been no increase in charge to take account of the rise in the price of coal. The minimum running charge in the domestic two-part tariff was set at 0.75d per unit, except in the Southern Area, where, because of the higher transport costs incurred for the coal used, it was set at 0.825d.

The only other major change in pricing was a result of the Report of the Clow Committee.¹³ After the war it very frequently happened that, during the winter months, the demand for electricity

exceeded the capacity of the generating plant with the result that the supply of electricity was suspended to consumers in particular areas so as to equate the demand to the amount that could be supplied. It was this situation which led to the appointment of the Clow Committee. Its task was to examine the practicability of installing instruments to measure maximum demand and consumption at different times of the day and also to consider whether the use of these instruments or alterations in tariffs or both could reduce the peak demand on the electricity supply system. The Report of the Committee (which is a very interesting document) recommended that the running charge for electricity should be made higher in the winter than in the summer. It is no secret that the electricity supply industry were not enthusiastic over this proposal. But at the request of Mr. Gaitskell, the Minister of Fuel and Power, a surcharge was introduced in the winter of 1948-1949. It is not, however, to be continued. Mr. Gaitskell said in Parliament that the Electricity Boards did not favour it and since there was no "cogent evidence that it exercised a sufficiently decisive influence on peak demand," he would not ask the Boards to continue it during the next winter. I do not wish to discuss the merits or demerits of a winter surcharge: powerful arguments can be adduced on both sides. But it has to be seen whether I am wrong in detecting in the attitude of the electricity supply industry a hostility to the use of pricing to secure a rational allocation of resources. On this no final judgment will be possible until the new Area Board tariffs are announced.

¹³ Cmd. 7464 (1948).

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Agrarian Unrest and the Civil War in China

By CHEE KWON CHUN*

CHINA is nominally an independent, first-class power but in an economic and social sense still a semi-feudal and semi-colonial state. Eighty percent of her people depend directly upon the soil for their livelihood under serf-like conditions. The farmers eke out a living by intense labor on small plots of land, averaging three-and-a-half acres each. To a Westerner such a system of intensive small-plot tilling appears more like gardening than farming as an industry. The present system of land tenure accounts for the static character of her agriculture and the simultaneous degradation of her peasantry. Since time-immemorial, this unjust feudal land system has been the chief institution of exploitation of those who till the soil by those who own it. In recent years, owing to the war and other factors, the lot of the peasantry has become even worse, and the serious difference in living conditions between those who own the land and those who use it is all the more intensified. A prerequisite for the establishment of democracy and the promotion of industrialization is the solution of this urgent land question.

The acuteness of the land situation in China today can best be understood if one examines the statistics of land distribution. Today two-thirds of those who cultivate the soil are tenants and semi-tenants. According to a survey of the Chinese Rural Economic Research Association in 1938, 68 percent of the total arable land was in the hands of the landlords and rich peasants, who jointly comprise 10 percent of the rural population, —the former, comprising 4 percent of the

population, own 50 percent of the land; and the latter, making up 6 percent, own 18 percent of the land. The other 90 percent of the population, consisting of middle and poor tenant peasants, own only 32 percent of the land. Twenty percent of these are middle-class peasants, owning 15 percent of the land, and 70 percent are tenants owning only 17 percent of the land. Where population is dense and trade and industry tend to develop, concentration is even greater. In the districts around Chungking, the seat of the National Government during the war, more than 80 percent of the population are tenants.¹ On the densely populated Chengtu plains over 70 percent of the land is owned by 7 percent of the people. In the Canton delta 85 percent of the farmers are tenants. In the neighborhood of Shanghai as much as 95 percent of the peasants do not own the land they cultivate.² Commercial profits have been reinvested in land, and this serves to create more absentee landlordism.

This unfortunate land situation was aggravated in the war years when the rich landlords used the government's dependence upon them for support to further exploit the peasantry. Every calamity, social or natural, served to increase the landlords' holdings. Studies by government and private agencies of the wartime land situation have been most revealing. The findings of the Agricultural Promotion Committee of the Central Government show that, from 1935 to 1941, a period of five years, Szechuan landlords increased their holdings from 69 to 70 percent of all arable

¹ Ti Chao Pai, "The Making of a New Era in Land Reform," *Masses*, Hongkong, Nov. 6, 1947, Col. 41, p. 15.

² R. H. Tawney, *Land and Labor in China*, pp. 37-38.

* Cooperative Administrator in China now on temporary leave in Honolulu.

land in the province. In the neighboring province of Sikong holdings of big landlords increased from 69 to 73 percent during the same period. A study by the governmental Bureau of Agricultural Research reveals in the fifteen rear provinces of China the percentage of tenants and semi-tenants rose from 55 percent in 1936 to 67 percent in 1941 and 75 percent in 1943, respectively.³

The exploitation through concentration in ownership is accompanied by exploitation through increase in rent. A survey in ninety-seven districts throughout eight provinces by the Legislative Yuan in 1924 shows that 80 percent of the rentals are paid in kind and that the amount of the rental is about half of the crop. The war years brought higher rents and wider use of payment in kind. In 1942 the government began to collect land taxes in the form of grain instead of cash. Big landlords immediately decided to tighten their grip on the peasants. They demanded higher rent and converted their cash rent into grain rent. Surveys of the four provinces of Szechuan, Sikong, Kwongsi, and Kwongtung show such a development from 1937 to 1941. A detailed study of twenty-six families in a district in Szechuan by Kan Ying Shih reveals an increase in rent by eighty-one percent from 1938 to 1940.⁴ Rice commanded a high price in the war. In many cases part of the rice rent was re-invested in land. In 1942 the writer witnessed, in the famine-struck and war-affected Hsining district of eastern Kwongtung, a Chen family whose sons served as generals in the national army, collecting over 150,000 piculs of rice rent a year. Part of the rice rent was used to purchase more land in the neighboring district of Wuhua as land could no longer be purchased in Hsining.

In general, rent is about 50 percent of the crops harvested. However, in many centers, as in the case of the western plains of Szechuan province—a rich rice-producing area which furnished the government from a quarter to half of its total rice requirements during the war—75 to 80 percent of the harvest is collected.⁵ The rule is, the greater the yield the higher is the rent in kind. In these Szechuan plains, the remaining 20 to 25 percent of the crops is required to pay for various necessities such as fertilizer, clothing, and shelter. Various expenses in the form of surtaxes and requisitions plague the peasants, including assessments to “support” local government activities by “conscription fees,” “payments for maintenance of the office of advisory council,” “training and inspection fees for local militia,” “election fees,” and many others. Needless to say, what is left after all such payments are made is inadequate to support a peasant family. In many parts of China the peasants are driven to bankruptcy under these conditions. They straggle away from the farm and become destitute. Peasant suicides are frequently reported in local papers.

Usury is another form of exploitation that oppresses the peasantry. The usurers are either landlords themselves or are closely allied to them. They have a strong influence in their community and the peasants are at their mercy. To obtain loans from them peasants often mortgage all their property. This usually includes crops standing in the fields, farm implements, and even clothing and personal possessions. The interest exacted from the peasants is being greatly augmented in the war, the rates running from 40 to 80 percent per season. Owing to inflation and shortage of currency in the

³ Tan Yih Chin, “Discussion of the Present Land Problem in China,” *Observer*, Shanghai, April 3, 1948, Vol. 4, No. 6.

⁴ *Op. cit.*, Ti Chao Pai.

⁵ Hsiao Chuang (pen name), “Glimpses of Farm Villages in Western Szechuan Plains,” *Observer*, Shanghai, September 18, 1948, Vol. 5, No. 4, p. 15.

rural areas, super-usury is practiced today. Cases are known in Szechuan where usurers loaned out one hundred catties of grain in the spring and collected an equivalent of two hundred forty-seven catties in return at harvest time. Many years ago, Professor Tawney described usury as "... one of the scourges of rural China. Its dimensions are such that in some districts almost three-quarters of the population are in debt."⁶

Inflation which began in 1941 is another factor that serves to worsen the lot of the cultivators. The prices of manufactured goods have risen faster than the prices of agricultural products. Farmers have had to sell their products at low prices and to purchase goods as fertilizer, tools, clothing, materials for house repair, and other necessities at high prices.

Bankrupt peasants have no bargaining power. In many cases they have no control over their crops after planting for they sell their produce to the speculators or merchants when their plants are mere sprouts in the ground. Selling when prices are low and delivering when prices are high has been a common practice throughout the war when prices were rising perpetually. To ameliorate the lot of the peasants the national government in recent years has established banks for refinancing rural agriculture. In principle this is sound but in practice the peasants do not always receive the benefit of the loans. Loans are made through the rural credit cooperatives which are organized on the paochia system and controlled by the landlord gentry, who manipulate the loans and charge usurious rates. As Professor Chuen Chia Chi points out, "... in this type of loan, the greater benefit goes to the rich peasant and propertied class in the rural district. Those receiving its

benefits are not those who badly need it. A part of this becomes usurer's capital."⁷

A good example of what happened in this respect is the case of the sugar cane growers in Hsintak and Chungshan districts in southern Kwongtung. Here the rich speculators purchased cane at \$1,200 CNC per picul in August 1946, with 50 percent down payment, and received delivery in April 1947 when cane had gone up to \$12,000 CNC per picul. In the short period of eight months the value of the cane had gone up ten times. The growers lost their crops and the gentry-speculator-merchants reaped a huge profit. Though part of the profit was offset by inflationary loss, the speculators' gain was still several hundred percent. Here the Bank of Agriculture had granted loans to the cultivators, but the sum was small and did not reach the small growers. Rich landlord cultivators dominated the credit cooperatives. The chairman of the local farmers' association was a landlord-gentry official, who tried to get "elected" as a farmers' representative to the National Assembly.⁸

The case of the sugar growers may be unique, but similar situations on a smaller scale may be duplicated in other centers. The miserable lot of the peasants cannot be exaggerated. Pinned in between the millstones of usury and exorbitant rent, they are further exposed to other injustices. In the war they bore the brunt of the burden. It was from this class that most of the conscripts for the huge army were drafted for the rich bought off their conscription. Today, in the civil war, conscriptions and grain collections continue. In south China the rich pay twenty to forty piculs of rice or HK 1,200 (Hongkong dollar) for each

⁶ R. H. Tawney, *Agrarian China*, Selected Source Materials from Chinese Authors, (University of Chicago Press).

⁷ Chuen Chia Chi, "The Cooperative Treasury, An Appraisal," *Chungkuonungchuen*, Vol. 5, No. 10.

⁸ Chun Chee Kwon, "General Survey of the Sugar Cane Industry in Chungshan," unpublished, Shanghai, October 1947.

son exempted from the armed service. Buying and selling of conscripts is a widely practised business.⁹

During the war against Japanese aggression the peasants, besides meeting military requirements, were frequently drafted for road building, construction of air fields, and other so-called public works with nominal or no compensation. Worst of all was that the ill-managed draft policy and mistreatment through corruption and abuse brought about general conscription scares in the villages. Rural people took to the hills or roamed from place to place to evade the draft. This resulted in greater decline in labor power on the farms and the consequent decline in production already aggravated by the loss of equipment and work animals in the country-side. Due to the shortage of able-bodied men, the old, the weak, and women had to do farm work. In many provinces such as Kwongsi, Hupeh, and Hunan, and especially in the lake regions where great military campaigns repeatedly took place throughout the war, the dislocation of the farming population through drafts, evacuations, and war devastation, coupled with the fear of further drafts upon return, discouraged many peasants from returning to their abandoned farms. The result was that landlords took advantage of the situation, moved in and claimed ownership to the land.

What is mentioned above reveals the grave character of the peasant situation, the rapidity at which the tillers are losing their small holdings, and the increasing miseries that beset the peasant class. Indeed, the present system is one of feudal exploitation. Excepting the rich peasants who operate their farms themselves as full owners or part owners, the landlord

class is essentially parasitic. It does not develop its land but merely leases it out for the collection of rent.

The composition of this class has changed. Many of the landlords of today are military and political officials who acquired large holdings by taking advantage of their office or power. A good example is the ex-magistrate of the Chungshan district, the former home of a large proportion of the overseas Chinese in America. This official, who once held a high ministerial post, received large tracts of rice land from the landlord traitors who served the Japanese in the war in exchange for aid he gave them in obtaining their exoneration. At the end of the Sino-Japanese war many of the government officials became new landlords by converting traitors' land to their private possession. These local gentries and landlords are really the dominant forces in rural China. Party officials and government officers must often bow to them or work in league with them, whether they like it or not. Usually they are the usurers, traders, custodians of local culture, and are even government officials in their localities. Because many of them possess strong followings or influence with the higher-ups, the government often finds it easier to appoint them to public office than to oppose them.

The final result of all these social and natural calamities has been a decline in the amount of land under cultivation and a general disintegration of the rural economy. Statistics show that in 1918 the total area cultivated in China was 1,314,472,190 mous. (A mou is equal to one-sixth of an acre.) By 1928 the figure was reduced to 1,248,781,000 mous. In only ten years cultivation declined by more than 10 percent, diminishing at the rate of more than one percent a year. During the Sino-Japanese war and since then the cultivated area continued to

⁹ Contributors and Editors, "Discussion on Rapid Disintegration of Rural Economy," *Economic Weekly*, Shanghai, July 15, 1948, Vol. 12, p. 8.

decline in many provinces. Honan, with a minimum official estimate of 93,499,000 mous of arable land, has 30 to 40 percent uncultivated. Honan, with the lowest estimate of 35,086,250 mous, has 40 percent unused. Kwongtung, with 42,450,000 mous of land, has 40 percent idle.¹⁰ Though exact figures for the whole country are not available, statistics for the three above-mentioned provinces indicate that the war with Japan and the present civil war must have caused a very great shrinkage in the cultivated area.

Attempts at Reform in the Land System

Kuomintang has talked of land reform for more than forty years. It has held political power for more than twenty years. Dr. Sun Yat-sen was the first to recognize the urgent need of reforming the land system. He realized that the Chinese revolution would not be complete without a drastic change in the land system and that the peasant movement must be drawn into the revolutionary program. Said Dr. Sun Yat-sen:

"If we want the revolution to succeed, we must first solve the land problem . . . The farmers comprise the bulk of our population. If they do not join the revolution, the revolution will be baseless . . . 90 percent of the Chinese farmers are without land. The greater part of the land they till belongs to the landlord. . . . A greater half of the produce they raise is robbed by the landlords. This is a great problem. If we cannot solve this problem there can be no answer to our question of livelihood. From my own investigation in rural areas, 60 percent of the grain which the farmers produced is given the landlord. This is extremely unfair. If the farmers are entitled to the fruits of their labor, they will surely be more eager to farm. All will gladly take to cultivation and will enjoy the larger return of crops. But as it is now . . . he is disinclined to farm. Because of this many fields become idle land."¹¹

It was not without reason that this great leader, Dr. Sun, advocated the policy of equalizing land ownership and giving the land to those who till it.

In the 1924 reorganization of the Kuomintang the agrarian reform movement formally became part of the party program. In the Northern expedition, from 1925 to 1927, the revolutionary government made attempts to enlist the peasantry into the movement. Peasant associations were formed in many provinces under Nationalist influence, and a policy of rent and interest reduction was attempted as a preliminary to redistribution. Peasant movements in this period greatly aided the Nationalists in capturing political power.

Unfortunately, after Dr. Sun's death in 1926, this policy was dropped almost entirely by the Nanking regime established in 1927 under General Chiang Kai-shek. The liberal wing and the Communists were suppressed, the revolutionary land policy was obliterated, and the peasant movement was outlawed. Since then the government has become more and more identified with the feudal landlord-gentry interest to the disadvantage of the masses. The feudal interests, riding the waves of counter-revolutionary reaction, infiltrated into the government and filled key positions. They became the very force making for reaction, corruption, and degeneracy in modern political China. The result is that the Kuomintang today is not carrying out any constructive land program. What is still more unfortunate is the worsening of the peasants' conditions and the intensified rapacious exploitation of the tillers of the soil due to greater concentration in land ownership, higher rentals, over-taxation, usury, and natural calamities.

¹¹ Sun Yat-sen's lectures on "Livelihood," "Land to the Tillers," and "Concrete Applications of the Three Principles," *China Economic Road*, by Hsu Tiao Hsin, pp. 149-161.

¹⁰ "The Tendency of Decline in Areas of Cultivation in China," *Far Eastern Magazine*, Vol. 30, No. 18.

ties during its twenty years of reactionary rule. Along with the degradation of the peasantry goes the rise of a new wealthy, corrupt, bureaucratic aristocracy, whose every interests coincide with those of the landlord-gentry and compradore class.

This new bureaucratic class, which gives lip service to Dr. Sun Yat-sen's principles, may be more polished and educated, but is in many ways worse than the Peiyang militarists (a group of feudal warlords headed by Yuan Shi Kai, who came into power after the fall of the Manchus and ruled China until they were overthrown by the Nationalists).

The ill conditions resulting from the betrayal of Dr. Sun Yat-sen's policies by the Nanking government under Chiang Kai-shek have been described by Professor Wan Kuo-ting and other supporters of the government in the following words:

"At present most of the representatives in the chief organs of public opinion are closely connected with the land-lord interest. The executive officers of the government's administrative organizations are usually from this class."

Another professor of the Central Political Institute described this situation as follows:

"The lower strata of the Kuomintang party organization are all controlled by the new gentry group, who struggled for power and fame in their locality. . . . This group of people compared with the gentry of pre-revolutionary time, are even more vicious. Old type gentries possess some old morality while these new ones possess none. . . . They rob the land from the tillers and become the new landlords."¹²

Dr. Sun Fo, the President of the Legislative Yuan, wrote,

"Village government is now and has been for a long time the private preserve of the corrupt gentry and rapacious land owners. Since the war the tyrannous grip of these local leaders over the village people has been

tighter than ever. Taking advantage of the government measures for the collection of grain and the conscription of soldiers, these people have increased their power for evil-doing, all at the expense of our helpless peasantry, who are the real heroes of this war—for are they not the people who grow food for the cities and provide the recruits for the army? They are corrupt oppressors of our people who must be deprived of their power if a truly democratic government is to be built up in this country."¹³

Postwar Agrarian Issues and the Civil War

In spite of the fact that the present landlord class oppresses and exploits the peasantry, the government must depend upon it to sustain the civil war against the Communists. At the end of the war against Japanese aggression the peasantry was left bankrupt and the countryside ruined. With the outbreak of civil war the conscription of able-bodied men, the collection of grain, and the levy of miscellaneous taxes to replenish and feed the huge army continue to drain rural China. The peasants are driven to sustain a war to uphold a system from which they have nothing to gain. Only a huge police set-up can enforce this system. Throughout the Sino-Japanese War some two million "mintuans" or local militia were organized by the local gentries and landlords to keep peace in the villages. Today this wide net-work of rural police organization designed to preserve the local status quo is revived.

The ill effects of war and misrule have reached a point where conditions throughout the land are ripe for a great change. There is growing unrest in the vast rear territory under governmental control. The end of a catastrophic war, followed by a civil war on an unprecedented scale, saw peasant uprisings in many parts of the rear provinces of Kwongtung, Chekiang, Fukien, Hunan,

¹² *Op. cit.*, Tan Yih Chin, p. 4, No. 6.

¹³ Sun Fo, *China Looks Forward* (New York: The John Day Co., 1944), pp. 120-121.

Kwongsi, Yunnan, and Kweichow. These peasant uprisings grow spontaneously and sporadically to oppose government requisition of rice and conscription of able-bodied men. They usually occur in the more remote mountainous regions. In Fukien they are largely centered in the southern part of the province. In Kwongtung they occur in the North and East river valleys, as well as in the southern part of the province and Hainan island. Such peasant movements, branded as banditry, are maturing into different expressions ranging from refusal of rice requisition and conscription to the blowing up of rice granaries and the murdering of conscription officers. In some centers developments are reaching more formidable proportions. Guerrilla armies are harassing or openly opposing local governments. Some of them operate under Communist leadership, other: affiliate their activities closely with the revolutionary committee of the Kuomintang in Hongkong under Marshall Li Chi-sen, who is opposed to Chiang Kai-shek. Northern and Eastern Kwongtung guerrilla activities illustrate the first type. Here, in the Spring of last year, the author was informed of the assassination of a conscription officer in a rural area of Nanyung town.

In these sections of Kwongtung the movement is so strong that the guerrillas blow up granaries and give rice to the poor. The government is forced to move the granaries into the towns where its control is more secure. In southern Kwongtung, particularly in the Luichow peninsula, the guerrilla activities have virtually forced out the local political power. In many districts local governmental control does not extend beyond the district town. Guerrillas dominated the countryside and even set up rival governments under the protection of the so-called joint-democratic army. Today

there is hardly a district in Kwongtung without guerrilla developments. What is happening in Kwongtung can be duplicated to a larger and smaller degree in other rear provinces.

The government depends on the peasants but is unable to improve their lot. Government reforms never find practical application. On the other hand, the Communists are making great strides to emancipate the peasantry. Wherever their power is established an all-out program of rent, interest, and tax reduction is carried out rigidly. Besides, other constructive measures such as cancellation of debts, government granting of loans to the tillers, and the establishment of a system of labor cooperatives for mutual aid to intensify labor productivity are promoted vigorously. In October of last year, as a result of a land conference for all the liberated areas, they announced a program for immediate redistribution of land to the tillers. This new program gives every peasant family from one-half to two-and-one-half acres of land. The amount given each family is determined by the size of the family and local conditions. The program makes provisions for protection and encouragement of private trade and industries. Landlords are not totally eliminated but are given proportional shares of the land on the same basis. The trade and industries they own are not confiscated. The program aims to liberate the peasantry from the thousand-year-old bondage, and to give this large section of the Chinese people a fresh start in life. Although the plot given to each peasant family is still small, this addition to whatever little holding they had, together with the abolition of rent, usury, and general exploitation definitely gives them relief. It is believed that, as a result, the fetters of feudal control are eliminated, prosperity is restored to the countryside, and

the purchasing power of the farming population is increased, thereby paving the way for the early unobstructed development of a new democratic social order. With the farmers owning the land they cultivate, the way is opened to cooperative farming on a larger scale, where technical improvements can be beneficially applied. Furthermore, re-financing, organization of cooperative marketing, development of subsidiary industries as well as technical guidance under enlightened government aid will be necessary to achieve rural progress.

Both the Kuomintang and the Chinese Communists lay great importance on the land problem, and both regard its solution as a prerequisite to the completion of the Chinese revolution. However, in practice the two parties differ. The Kuomintang's approach is dilatory, piece-meal, changeable, and inconclusive. It is a reform from the top down. It arises from a narrow pivot of authority, which works down and outward by means of decrees, depending upon the provincial and local government organs for execution. During the 1927-1937 period many decrees were issued to bring rent down to 37.5 percent of the harvest. But these attempts at reform all ended in failure because the landlord gentry strongly opposed them from within and without the administration.

The Communist approach to the land question is direct, drastic, and concrete. It works from the bottom up and with its strength and authority derived from the masses of the peasants. Where the Kuomintang temporizes and debates, the Communists act. Professor Wan Kuo-ting of the University of Nanking describes this difference as follows:

"From a theoretical standpoint, the land policies of the Communist and the Kuomintang

have a great deal in common. Both are based on Sun Yat-sen's ideas of equalization of land ownership and the land-to-the-tiller principle. The only difference is that while the Kuomintang favors a peaceful transfer of rights from landlords to the peasants, the Communist does not hesitate to resort to a fairly drastic confiscation of the properties of the wealthy landlords . . . The Kuomintang, however, proposes much more than it performs."¹⁴

Today throughout the liberated areas peasant unions are organized, and these groups are entrusted with the responsibility of enforcing the new land redistribution program.

Although the Communist approach to the land question is unlike that of the Kuomintang, it is by no means similar to the Russians. Thus wrote Dr. Chen Han-seng, an eminent scholar on Chinese agrarian questions:

"The Soviets nationalized the land and redistributed only its use, but the Chinese Communists redistribute both the ownership and the use of the land. This is one among many factors which indicate fundamental differences in the nature of the present upheaval in China and the Russian revolution of thirty years ago . . . Although the Soviet land policy has been studied by the Chinese Communists the land reform which they are carrying out represents an indigenous solution to their country's gravest problem."¹⁵

The ability to fight for the interest of the large groups of exploited people has won the Communists mass support. In contrast to this, the Kuomintang, by defending the minority feudal landlord-bureaucratic-compradore interests, alienates the masses. This is one of the many reasons for the military victories of the Communists. In the areas where their political and social reform is taking root, Communist troops are strongly supported, whereas the government armies receive little assistance. Cooperation of

¹⁴ "Land Reform as Conducted by the Kuomintang and the Communists," *Ta Kung Pao*, Shanghai, March 17, 1947.

¹⁵ Chen Han-seng, "Agrarian Reform in China," *Far Eastern Survey*, Feb. 25, 1948, Vol. 17, No. 4, p. 41.

the local populace is an important factor in the winning of a battle. To the Communists the war is a social political reform movement, whereas to the Nationalists it is purely a military campaign for the defense of the status quo. Communist Chairman, Mao Tse-tung, also laid great importance on the peasant question in the Chinese revolution when he wrote:

"... the entire party must understand that thorough reform of the land system is the fundamental task of the present stage of the Chinese revolution. If we can broadly and thoroughly solve this land problem we shall have gained the prerequisite to victory against our enemy. . . . Although the ratio of landlords and wealthy peasants to the rural population varies in different centers, as a whole they occupy about 8 percent of the population (on a family basis). In general, the land they occupy is from 70 percent to 80 percent of all arable land. Because of this those who are opposed to our land reform are very small in number. Conversely, those in the rural areas who can and ought to participate in our land reform united front are many, upward of 90 percent to the people."¹⁶

The importance of land reform to progress and stability in China was long foreseen by Professor R. H. Tawney who wrote ten years ago:

"Land tenure will require to be reformed and the strangle-hold of the usurer and middleman to be broken before much can be expected in the way of technical progress . . . a government which permits the exploitation of the mass of its fellow citizens on the scale . . . may make a brave show but it is digging its own grave. A government which grapples boldly with the land question will have little to fear either from foreign imperialism or from domestic disorder. It will have as its ally the confidence and goodwill of half-a-million villages."¹⁷

In this respect the Chinese Communists have been able to show more active regard for the welfare of the Chinese

masses. On this, Professor John K. Fairbank writes:

"Whatever may be the case elsewhere, there is no doubt whatever that the Chinese Communist movement as a party out of power, is strongly motivated to show a broad concern for the masses of the people, since it is from mass support that it derives its strength. This cannot be said of the Kuomintang regime in power, as now constituted. Since the long future belongs to those who prove that they act for the welfare of the Chinese people, our support for anti-communism in China will be a losing battle as long as the Chinese Communist movement retains popular support."¹⁸

By actuating land reform the Chinese Communists have moved into an historical vacuum, which the Kuomintang, due to ill leadership, has failed to fill. It has wrested this historical force from its opposition party and moved on its momentum which Dr. Sun Yat-sen long advocated as part of his revolutionary strategy. Where their control is established, a vigorous redistribution program helps to consolidate Communist power. A deep and vast change in the composition of society is already going on in the liberated areas. The great masses of landless peasants are becoming landowners. They are becoming politically awakened and assertive. Manchuria is an example of an area where this situation is true today. In the past only 10 percent of the population composed of landlords and rich peasants owned 80 percent of the land. Under the Communist reform movement, from July 1946 to February 1949, the entire picture was changed.¹⁹ This change and trend is bound to have a great effect on the rest of China.

¹⁶ John K. Fairbank, "China's Prospects and U. S. Policy," *Far Eastern Survey*, July 2, 1947, Vol. 16, No. 13, p. 149.

¹⁷ Mao Tse-tung, "The Present Situation and our Task," Hongkong, Dec. 25, 1947, p. 10.

¹⁸ *Op. cit.*, R. H. Tawney, p. 18.

¹⁹ New China News Agency, "Three Years of Development in Manchuria," *China Digest*, October 5, 1948, p. 7.

After long and exhaustive studies the Chinese Rural Economic Research Association has reached the conclusion that it is hopeless to expect any solution of the agrarian question without total abolition of the present land system. Thus, back in 1937 this association stated editorially:

"The semi-slave type of tenancy system is inseparable from usury exploitation and land tax system as it is found in China today. Unless the existing power of the landlord class is done away with and unless the existing tenancy system is wiped out, all policies designed to bring about land tax reform or to check usury, or any other ameliorative measure, be it administrative or educational, will only bring about disillusionment in the end. To put an end to the land system under the semi-feudal landlords, therefore, is an urgent matter in China, and this urgency reveals the nature of the present land problem."²⁰

Truly, the agrarian situation in China should not be mistaken as a purely technical land problem. It is a problem of an ill-balanced social economic system in tortuous transition, where the Western impact has hastened the break-up of the old equilibrium of things, imperialistic forces have served to reinforce the old controlling interest; thereby making China's struggle for reform and modernization a long and abortive one. The painful struggle against exploitation and oppression on the part of the rural masses began with the Taiping Revolution and continued on to present-day China. Specifically, the problem may be said to be a conflict between land hunger and

land waste. Yet, its solution cannot be found by merely treating it as an isolated non-political issue. In so far as ownership and exploitation are deeply bound up with bad politics, bad government, and a bad social system, the struggle for agrarian reform is invariably a struggle for political reform and social justice.

The picture of China's peasantry has been a dark and miserable one. Today, in the wake of the great social upheaval and the rapid advance of the people's liberation army, the total elimination of the reactionary Kuomintang bureaucratic-landlord regime is reduced only to a matter of months. Along with it will go the semi-feudal land system and its deathly grip over the peasantry. With the coming establishment of a democratic coalition government and with the war soon to be over, it is a certainty that great efforts will be given to rehabilitate rural life. Just how soon and how effectively the new government will be able to aid the peasantry will depend on a number of factors. But one thing is certain, merciless landlordism, exorbitant rent and taxes, usury, arbitrary conscriptions, and all the oppressive measures of the old regime will pass into the abyss of history. Henceforth, under a new political set-up the peasants' awakening and activity will be accelerated, and through the peasants unions these exploited ones will be more articulate in the collective struggle for their own betterment. With the fetters of semi-feudal control removed the way is cleared for greater improvements through government help in the future. Like China itself, the Chinese peasants are entering a new era in history.

²⁰"The Chinese Land Problem, Trade Capital, and Usury Capital," edited by the Research Society for Chinese Agrarian Economy, Shanghai, 1937, pp. 1-8. English translation in *Agrarian China*, Selected Source Materials from Chinese Authors, (University of Chicago Press), p. 60-61.

Salient Characteristics of Petroleum Pipe Line Transportation

By HUGH N. EMERSON*

THE subject of petroleum pipe lines has been of recurring interest ever since the 1870's. A reconsideration of this specialized method of transportation is timely for the economist, business man, legislator, and student of public affairs. Popular attention is now being directed to the petroleum industry and its important function in the economy. A familiarity with the petroleum industry and, by the same token, with petroleum pipe lines is helpful for an understanding of the country's economic-social composition. The service of petroleum pipe lines is used by a single group of commodities: crude petroleum and its derivatives, principally gasoline, kerosene, and distillate fuel oil, and allied substances. The influence of these commodities, which are used for the production of power, heat, and light, permeate the entire economic and social framework of this country and much of the world. This is true both in peace and war. In addition to the most direct effects of petroleum distribution and the use of pipe lines, there are ancillary problems including, among others, the form and size of the business enterprise, competition within the industry, and the relations with alternative or supplementary transportation agencies.

This treatise provides a general background on petroleum pipe line transportation. The subject is discussed under the following interrelated topics: (1) technology, (2) present systems, (3) historical development, (4) ownership, (5) organization, (6) operation, (7) costs,

(8) regulation, (9) controversial questions, (10) advantages and disadvantages of pipe lines.

Technology

The foundation on which petroleum pipe lining rests is the engineering knowledge and skill of the mechanical and civil engineer, coupled with the enterprising and improvising nature of the oil man. The basic problem is technological, requiring the solution of a problem in hydraulics. The movement of a liquid through a pipe is resisted by the roughness of the pipe and will also be affected by difference in elevation between points on the line's route. Detailed performance data have been accumulated on the flow of fluids through pipes so that the throughput of pipes of various diameters at various pumping pressures can be computed readily. The weight of the fluid, its slipperiness, and the rate of flow are the significant variables, i.e., the specific gravity, viscosity, and desired daily volume. A given pipe at a given pressure will transport appreciably more gasoline than crude oil and more gasoline than distillate fuel oil. Pipe lines are not used interchangeably for crude oil and refined products because the problems of contamination are too serious. Within certain wide limits, contamination between different grades can be controlled so that a product line will move several different grades or products at the same time in consecutive batches and a crude oil line will carry batches of different crude oils.

The selection of the route to be traversed and the approximate size of the

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pipe to be used is indicated in a general way by economic and business considerations. Some domestic petroleum pipe lines have reached the diameter of twenty-four inches, and lines of up to thirty-four inches are projected for construction abroad. Eight, twelve, and sixteen-inch diameter pipes are typical of trunk line systems. Gathering systems to feed a crude oil trunk line and spur lines to distribute from a product trunk line are usually smaller. Pipe lines are usually laid about thirty inches deep so as to be below the area of cultivation.

Present Systems

The dictum that a familiarity with economic geography aids to a thorough understanding of transportation matters applies to petroleum pipe line transportation. The domestic crude oil lines may be considered in four general groups. One group is the carriers to the Gulf Coast from the interior of Louisiana, Texas, Oklahoma, and New Mexico. On the Gulf Coast the crude oil is either trans-shipped or refined and trans-shipped by tanker, predominantly to eastern seaboard destinations. A second group of crude oil lines terminates at refineries in the Midwest, such as St. Louis, Chicago, Toledo, and Cleveland, bringing crude from Texas, Oklahoma, Kansas, and Wyoming. The lines within California are a third group. These lines feed the refineries in the San Francisco and Los Angeles areas, which refineries supply the petroleum requirements of the United States and Canada west of the Rocky Mountains. A fourth, or "all other" group comprises the remainder of the crude oil lines east of the Rocky Mountains which, while extremely important, would not be classed as long lines. Such lines are exemplified by the systems supplying refineries in Oklahoma, Kansas, and Texas, the line from the

Illinois fields to the Chicago and Ohio refineries, lines in Michigan, and lines in the Appalachian fields of Pennsylvania, West Virginia, and Ohio. Practically all crude oil moves part of the way between the crude fields and refineries by pipe line, and about seventy-five percent of final delivery of crude to refineries in the United States is by pipe line.

Domestic product lines running from refineries or marine terminals to consuming areas also may be classed in four general groups. A principal group originates at refineries in the mid-continent area, or Midwest. These are the lines running from North Texas, Oklahoma, Kansas, and the St. Louis areas to Chicago, Minneapolis-St. Paul, the Dakotas, and across Illinois and Indiana to Ohio. The southern states are served by product lines with supplies originating at Gulf Coast refineries. A third general group of lines originate on the Atlantic Seaboard in the Philadelphia and New York areas and run westward to interior eastern cities and, in some cases, reach to the Great Lakes and Ohio. The remainder of the lines constitute a miscellaneous group of fairly short lines in various parts of the country, as exemplified by lines in California, from Toledo to Detroit, and from Buffalo to Central New York State, and the lines constructed recently within Texas.

Pipe line transportation is not peculiar to the United States but is likewise used abroad wherever there is an economic justification. Pipe lines are an integral part of the crude oil-producing activities in Venezuela and Columbia, where they are used to bring the crude oil from the interior to the seacoast for trans-shipment by vessel. It is similar in the East Indies and in the Caspian and Black Sea areas. With the increased production of crude oil in the Near East, the installation and operation of crude lines

from the fields north of the Persian Gulf to Mediterranean ports has become of especial interest. Two lines of twelve-inch diameter are operating, and additional lines up to thirty-four inches in diameter and with a daily capacity of two hundred seventy thousand barrels per day are in the course of construction or are planned.

Historical Development

It is important to recognize that petroleum pipe line transportation is not something new but rather is a proven method of transportation that has been used extensively since the 1880's. Shortly after the first production of crude oil in Western Pennsylvania in 1859 attempts were made at the use of pipes to take oil from the wells to tank car loading stations on the railroad. By 1875, a sixty-mile line of four-inch diameter was carrying crude oil to Pittsburgh and, in 1878, another line reached the eastern seaboard. When the crude oil fields in Wyoming, California, Texas, and Oklahoma were discovered around the turn of the century, the technology of crude pipe line transportation was well established. Product pipe lines have been a much more recent development. While a two-hundred-fifty-mile pipe line successfully carried kerosene as early as 1893, the transportation of gasoline is usually considered to have started in the 1930's. Product lines have increased in number and capacity until they now provide a very significant portion of the transportation in several areas. Product pipe line operation is now thoroughly established and is a method the utilization of which is controlled by economic considerations rather than technological.

The development of pipe line transportation was stimulated during the recent war by the design, construction, and operation of two long lines of larger dia-

meter than any previous long line. These were the Big and Little Inch Pipe Lines of twenty-four and twenty-inch diameter providing, respectively, crude oil and product transportation for some fourteen hundred miles from Texas to New York and Philadelphia. These lines represented the application of previously held engineering theories and provided experience in the operation of large lines. In addition to the wartime use of these two big lines and some other domestic war emergency pipe lines, there were many other war uses of pipe lines.

An engineering and war epic was the laying of twenty pipe lines of three-inch diameter under the English Channel in Operation Pluto in order to support the invasion of France. Pipe lines were installed and used in combat areas by specialized pipe line troops of the Army Engineers. Another war pipe line was the system of four pipes paralleling the Panama Canal. These lines relieved the congestion of shipping by eliminating the necessity for many tankers transiting the canal.

Ownership

Both crude oil and product pipe lines are, with insignificant exceptions, owned exclusively by petroleum companies who function in one or more other phases of the petroleum industry. The four functional divisions of the petroleum industry are: crude oil production, transportation, manufacturing, and marketing. Both large and small integrated units in the industry own pipe line transportation. Most of the pipe line transportation capacity is owned by the larger integrated companies who represent the preponderance of the industry's capacity in the other three divisions. According to the Temporary National Economic Committee's 1938 findings, the twenty largest integrated oil companies control approxi-

mately seventy-two percent of the crude oil pipe line mileage and ninety-six percent of the product pipe line mileage. The ownership of a pipe line sometimes rests with a single parent company and sometimes with two or more parents who have contributed to the financing. The original cost of a pipe line system can reach considerable proportions and, in the case of some systems, represents investments of seventy to ninety million dollars. Because of the economies in original investment and in operating expense for a single large pipe line as compared to two or more smaller diameter pipe lines to handle a comparable throughput, there has been an incentive for joint-venture pipe lines. This has been exemplified especially in the product pipe line field where as many as eight shippers have provided the necessary capital. In recent years there has been some "third party" financing. While, as stated, the ownership of pipe lines usually lies with the petroleum companies, principally the larger companies, it should be pointed out that the ownership of the latter rests, in turn, with the thousands of shareholders of petroleum securities.

Organization

A crude oil or product pipe line is usually organized as a separate corporation by the parent petroleum company and, characteristically, is a common carrier. In infrequent instances a pipe line is not separately organized but is simply a specialized department of an integrated oil company. The business of a pipe line is conducted through several divisions whose precise functions vary from company to company, depending largely on geographical considerations and the type of service performed by the line. Characteristically, a pipe line operates on a functional basis and in-

cludes divisions to handle the following problems: administration, pump station operation, terminal operation, oil movement, maintenance, materials and supplies, communications, electrolysis control, claims and right-of-way, accounting, and treasury.

Operation

Some salient features of pipe line operation, whether by a common carrier or by a private carrier, may be typified by reference to certain usual tariff rules covering: quantity and quality of oil accepted for shipment, identity of oil in transit, pipage, proration of pipe line capacity, and negligence and joint loss. To be acceptable for shipment, the quality of crude oil, on a crude line, or of product, on a product line, must fall within specified chemical and physical limits. This has the effect of minimizing the possibility of contamination between different grades or products and restricting the use of the pipe line to the quality for which it was designed. In order to reduce problems of contamination which may result if oil is moved in numerous batches there are quantitative requirements in pipe line tariffs. The minimum tender requirements have decreased generally over the years from such quantities as one hundred thousand barrels to the range of ten to twenty-five thousand barrels and have, in some instances, dropped as low as twenty-five hundred barrels. In the last instance the small tender allowance is qualified in that movement will be made by the carrier only when a grade of similar specification is being transported.

The obligation of the carrier to maintain the separate identity of tenders varies. Crude oil is usually treated as fungible goods, and the carrier need only deliver oil of the same commercial specification. Because of the difference

in technical specifications between somewhat similar products, especially as manufactured by different refiners, and because of the importance assigned to such distinctive variations by competitive marketers, product pipe lines usually endeavor to maintain the separate identity of tenders, and some carriers accept an absolute obligation in this respect. Other carriers retain the option of making a limited substitution of similar, but not necessarily precisely identical, product.

Pipe line tariffs usually provide for a pipage agreement with users. This is intended to assure the carrier that adequate facilities have been provided to permit delivery to the pipe line and receipt from the pipe line in quantities and at pressures satisfactory to the line before the carrier accepts an obligation to transport. Since the movement of oil through a pipe line system is by a process of successive displacements, a restriction in rate of delivery or acceptance at any point can slow down the entire movement of all oil in the line, thus reducing the load factor or efficiency of the system.

Provision is made in tariffs for the contingency that more oil may be offered for transportation than the carrier can handle promptly. The tariffs state that, in such a circumstance, all shippers are treated on an equal footing, and no preference may be shown to anyone. The capacity or transportation ability of the carrier is prorated among shippers according to the quantities of oil each actually has on hand and has offered for shipment. A principle of equality or proration as among shippers is also utilized in the event of loss or damage to oil in transit when not due to the carrier's negligence. Regardless of the ownership of the specific batch of oil affected, all owners of oil in the system at the time of loss share in the oil loss, following the pattern of a general average adjustment

at sea. The carrier is not an insurer of the product in his care and is answerable only for losses caused by his negligence.

Costs

Pipe line costs may be discussed as they relate to fixed, variable, and marginal expense, to tariff charges, and as they compare to costs via other transportation methods. The expenses of pipe line ownership and operation are preponderantly fixed expenses. Such expenses follow from the original heavy investment of constructing the line, which original investment may average between \$10,000 and \$20,000 per mile, depending on the territory, size pipe, etc. About seventy percent of the original investment of a pipe line is in the pipe and its installation. The fixed expense of pipe line ownership, those expenses that continue whether one or thousands of barrels a day are transported, usually range between sixty and seventy percent of total expense. The fixed expenses are principally to cover depreciation (20% to 30% of total expense), routine maintenance (12% to 18% of total expense), and taxes other than to the United States (8% to 9% of total expense).

The variable costs of pipe line operation are those expenses that vary directly with the use of the system. These direct expenses are the expense for transportation and for United States taxes which, together, constitute 30% to 40% of total costs. Transportation expense comprises principally the labor and power used in moving the oil and amounts to 28% to 35% of total expense. A federal transportation tax on pipe line movements is calculated at $4\frac{1}{2}\%$ of the gross tariff income, or at $4\frac{1}{2}\%$ of a reasonable equivalent transportation charge for a carrier who does not publish tariffs.

The marginal expense for a going pipe line to handle additional quantities is

comparatively slight until the pipe line's maximum capacity has been reached. The only significant costs will be for power to operate the system at an increased pumping pressure and for payments to cover the taxes related to additional business.

Because of the nature of pipe line costs, two general consequences are that there is always a strong incentive to operate a line at capacity and that, once a pipe line is constructed, it is difficult for a competitive transportation agency to dislodge it. The incentive for capacity operation follows from the relative proportion of fixed to variable expense and the interest in having a high volumetric divisor so as to spread the fixed expenses and hence decrease the unit transportation costs. From the competitive transportation standpoint, the marginal costs of handling additional volume in an existing pipe line are relatively slight, so the pipe line operator may be in a strong position as a contender for additional business. This is especially so if the volumes offered for shipment are on the decline. A decline may reach proportions where the operator will feel justified in recognizing that almost a third of his current expenses are for depreciation charges on the original investment which, under the circumstances, is a sunk cost and may properly be disregarded.

The tariffs charged by common carrier pipe lines appear to have covered the range usual to transportation services, spreading from a high of what the traffic would bear to a low related to a cost-of-service basis. The user of pipeline service sometimes found, especially in the years gone by, that he would not realize a savings in freight expense when moving by pipe line or by pipe line and beyond by railway as against a through movement by railway. This condition was pointed to as indicative of the pipe line's

lack of interest in performing a transportation service for shippers generally. In later years the level of tariffs was reduced somewhat as against freight expense by alternative routes. However, the high returns on investment realized by many pipe line carriers was conducive to the opinion that tariffs approximated a level of what the traffic would bear. The pipe line companies have been quick to emphasize the hazards of their business, especially because traffic moves one way only and because the quantities of oil available for movement over future years is speculative at best. In recent years, tariffs have tended more toward a cost-of-service basis for reasons as discussed subsequently.

The subject of comparative costs of transporting petroleum by various methods is complicated. The cost of using each method is conditioned by the quantities to be handled, physical circumstances such as the existence of rivers and harbors, the circuitry of routes, and the problem of terminaling, etc. Nevertheless, a presentation of some transportation cost figures is interesting as indicating the relative position of pipe line transportation.

An analysis of some of the Interstate Commerce Commission data for 1947 shows that, taking eight of the large crude oil carriers, their average trunk line income (i.e., tariff) was about $4\frac{1}{2}\text{¢}$ per barrel per 100 miles and their expense was about $2\frac{5}{8}\text{¢}$ per barrel per 100 miles. A similar consideration of seven of the large product lines shows an average income (i.e., tariff) of about $7\frac{4}{8}\text{¢}$ per barrel per 100 miles and an expense of about $4\frac{3}{8}\text{¢}$ per barrel per 100 miles. These crude and product costs are composite figures for lines of various sizes operating at various capacities. The costs via extremely large lines are considerably less. While the data and

studies published on the Big Inch and Little Inch War Emergency Pipe Lines from Texas to New York and Philadelphia are not conclusive or definitive, they indicate that long lines of twenty to twenty-four inch diameter, when operating at capacity, provide transportation for about 1¢ per barrel per 100 miles.

Transportation costs by ocean tanker also involve a number of variables including particularly the size of the ship, her flag—which determines the wage scales—and the price of bunker fuel, which can fluctuate violently. The charter rate also reflects the supply and demand of ships. During the past several months, the U. S. Domestic charter rate has fluctuated over a wide range between about 45¢ and 19¢ per barrel for voyages from Texas to North of Hatteras. The expense factors involved are readily available in the trade, and it seems reasonable to consider that, for a representative ship, the war-constructed T-2 design, the total cost for a basic voyage from Texas to New York is about 25¢ per barrel, which is equivalent to 1.18¢ per barrel per 100 miles. The newer ships, at least half again as large as the T-2, will undoubtedly give somewhat lower costs between those few harbors that can accommodate the larger vessels.

The condition of the rivers, locks, and canals, the length of the haul, and the quantity transported all have a very direct effect on the cost of inland barge transportation. Much of the equipment in petroleum service is operated privately by the petroleum shippers. Some studies have indicated the likelihood that the newest, most efficient equipment, moving large quantities such as 100,000 barrels over a thousand miles, may have transportation costs in the order of 1.5 to 2.0 mills per ton-mile. It is known definitely that a ceiling rate of 3.75 mills per ton-mile was in effect under the O.P.A. A con-

servative evaluation indicates that large and consistent volumes can be moved over long distances on the Mississippi-Ohio River System for about 3.25 mills per ton-mile or 4.9¢ per barrel per 100 miles.

While there has been much speculation as to the trunk line cost for moving petroleum by railroad, there is little published data that may be given much credence. Railroad costs are joint costs, and petroleum is one of the higher rated items that usually bears appreciably more than its direct handling costs. Furthermore, rates are premised on a per-car basis, and it is usually necessary for the car to be handled separately at origin and destination. During the World War, when large quantities of petroleum and petroleum products were being handled over long distances in trainload lots between the Southwest and the North Atlantic states, some of the freight rates gave transportation for about 11¢ per barrel per 100 miles. As a further example of the best rates at which petroleum has been moved by railroad, mention may be made of a very heavy intra-state Texas service by a single carrier during 1947 and 1948 for slightly over 450 miles at rates equivalent to about 11¢ per barrel per 100 miles.

An additional transportation method which will not be considered here is over the highways by tank trucks. This method is essentially a distribution service for relatively limited volumes, as the representative large tank truck carries between 4,000 and 6,000 gallons.

The alternative methods for the trunk line movement of petroleum as just discussed may be summarized as follows, and bearing in mind the admonition that other related costs must be considered also before concluding which method or combination of methods provided the

most economical transportation to meet a specific situation:

| <i>Method</i> | <i>¢ /Bbl. /100 Miles</i> |
|---|---------------------------|
| Extremely large pipe line..... | 1.00 |
| Representative American T-2 design Tanker..... | 1.18 |
| Composite Crude Lines..... | 2.625 |
| Composite Product Lines..... | 4.38 |
| Large Mississippi-Ohio River Inland Barge Tows..... | 4.90 |
| Railroad in Trainload Lots..... | 11.00 |

Regulation

The amenability of petroleum pipe lines to regulation has been influenced especially by the determination of a carrier's status as a common or private carrier and whether a line is in interstate or intrastate service. While petroleum companies generally viewed their pipe lines as private plant facilities, the competitive situation in the petroleum industry in the early 1900's left much to be desired by the public and the business community generally. Consequently, Congress, in 1906, by the Hepburn Amendment to the Interstate Commerce Act of 1887, placed interstate common carrier pipe lines under the control of the Interstate Commerce Commission. In the scope of its regulation, the Commission looked through the form used in the operation of pipe lines to the substance and was upheld by the courts in construing practically all crude oil pipe lines crossing state borders as being common carriers. This was despite what was then a usual practice of the pipe line companies owning the crude oil transported because of having purchased the oil at the point of shipment. The crude oil seller was considered as being the beneficial recipient of the transportation service. When a through movement is made crossing state boundaries and involving two or more pipe lines, although one of the lines functions only in one state, that carrier may never-

theless be construed as being an interstate carrier, subject to the Interstate Commerce Commission on the basis of the transportation being actually interstate.

Under the application of the Interstate Commerce Commission's authority, common carriers must file their tariffs of rate, routes, and regulations. Action has been taken by the Commission over the years with the object of liberalizing the terms of tariff regulations, especially as to the size of minimum tender requirements, and also of reducing tariff charges. Pipe line accounting must conform with rules and regulations of the Interstate Commerce Commission. Valuation of pipe line plants has been made by the Commission, and depreciation rates are established by the Commission for the purpose of determining the depreciated investment as a rate base. Interstate pipe line carriers are not subject to the commodities clause of the Interstate Commerce Act as are the railroads and, hence, are not forbidden from transporting oil that they own. Certificates of public convenience and necessity are not required from the Interstate Commerce Commission, and a pipe line does not acquire the right of eminent domain from the federal authorities.

Since interstate product pipe line transportation service varies in some significant features from crude pipe line transportation, there is some doubt as to the extent to which existing Interstate Commerce Commission authority applies in some respects. Under the Pipe Line Cases (234 US 548 (1914)), crude oil pipe lines in interstate operation were held to be de facto common carriers because crude oil was taken from scores and hundreds of producers and, in effect, transported for the benefit of these many shippers. An exception to this holding is the finding in the *Uncle Sam Case* that crude oil moved by a pipe line where the

wells and pipe line are under common ownership is private transportation. Product pipe line transportation is usually performed for the direct benefit of a limited number of shipper/consignees, and this may be viewed as presenting a substantially different factual situation than that decided upon in crude oil transportation. It was anticipated that the findings in *U. S. v. Champlin Refining Company* might serve as a determinant of the status of product pipe lines operated by petroleum companies as private plant facilities. However, the court felt required only to decide that the Champlin Refining Company's pipe line must file valuation reports with the Interstate Commerce Commission.

The extent to which intrastate pipe lines are regulated depends on the application of the laws of the individual states. It is sometimes optional with the pipe line as to whether it will be a private or a common carrier, depending on the form of incorporation. In other instances, little option remains with the carrier because of the state's incorporation statutes having been drawn in terms making an acceptance of common carrier status a condition of the issuance of corporation papers. Where a pipe line is a common carrier, it is usually subject to a state regulatory authority comparable to the Interstate Commerce Commission. Such authorities have varying designations, such as public utility commission or railroad commission. In addition to control similar to that of the Interstate Commerce Commission, some state commissions require that a common carrier obtain a certificate of public convenience and necessity before proceeding with the construction or extension of a line. Pipe lines that are state common carriers ordinarily can exercise the power of eminent domain. That is, whereas a carrier not so empowered has to secure its right-of-

way by negotiation with property owners and hence, runs the hazard of being blocked in its development or of being required to pay excessively for rights, a common carrier can secure a writ of condemnation from the courts, proceed promptly with the installation of the pipe line, and have the damages determined and awarded subsequently in the courts.

Controversial Questions

There are a number of controversial questions as to petroleum pipe lines on which strongly conflicting views are held. The more frequently discussed questions, which are overlapping to some extent, include the following matters: the availability of pipe line transportation to potential shippers, the common ownership of pipe line and of oil transported, the plant facility versus common carrier status of pipe lines, pipe line earnings, competition, and regulation. The question of whether or not crude pipe line transportation is available without discrimination to all potential shippers is not so active as it once was. Minimum tender requirements have been reduced to the point where they are not generally considered to be unduly restrictive, and tariff charges have also been reduced. The general availability of product pipe lines to potential shippers is subject to controversy. The carriers will point to the terms of their published tariffs as being reasonable and as stipulating clearly and precisely the terms on which transportation will be performed for anyone. The critic will point, in some instances, to the size of the minimum tender required and, in others, will suggest that the trunk line's not providing terminals, in effect, raises a financial bar of serious dimensions to many potential users who cannot readily invest in terminal facilities.

One segment of the petroleum industry advocates the application of a commodi-

ties clause to petroleum pipe lines. These interests contend that a preferential advantage accrues to a pipe line owner/shipper. It has been pointed out that, if a pipe line carries both owner's oil and oil for others, the earnings on "outside oil" may serve as a credit against the net pipe line operating expenses to the end that the owner secures a transportation service for less than he would if he did not have such an arrangement, and this could give the owner some margin of advantage over the non-pipe line owner. In refutation, the criticized carrier may contend, in part, that fairness to shippers simply constitutes their receiving a transportation service at competitive market rates and may suggest that, by the pipe line carrying the total volume it does, the result is that unit tariff charges are lower than they would be at a lower volume. The carrier may suggest further that the extension of a commodities clause to petroleum pipe lines will certainly be disruptive and restrictive to the present pipe line owners and will be of doubtful benefit to non-owner shippers.

The consistent position of the Interstate Commerce Commission, decisions of the courts, and contention of legislative investigators and critics that pipe lines are common carriers still leaves room for an opposing view that some pipe lines are plant facilities. The basis for such a view would be that a dependable crude oil supply is so vital to a refinery that the refinery will find it to its economic interest to assure itself of the transportation of crude oil to the refinery. As to product pipe lines, there is a substantial amount of pipe line mileage owned by integrated petroleum companies, who contend unhesitatingly that the pipe lines are private plant facilities and are being operated as such. Critics may advance the view that even product pipe lines having the legal status of common carriers

function essentially as private plant facilities due to the fact that they are used by a single or limited number of shippers.

Another point of argument is whether or not pipe line earnings are excessive and whether or not such high earnings have redounded to the serious competitive disadvantage of the non-pipe line owners. After an extended investigation in which it found annual returns as high as 40% on net worth, the Interstate Commerce Commission concluded that the returns of common carriers were much too high in many instances. In an other action, the federal government proceeded against the principal pipe line companies in a civil action on the ground that the payment of high dividends by a subsidiary carrier amounted to an unlawful rebate to the shipper/owner. This action was terminated by the entry of a consent decree under which the subsidiary pipe line carriers are limited in their remission of dividends or anything of value to the parent to 7% per annum on the Interstate Commerce Commission's valuation of the pipe line investment. Earnings in excess of this must be held separately for use in certain restrictive ways, such as the installation of new pipe line facilities without increasing the rate base. Such "frozen funds" may also be held intact for distribution to the new shareholders if the parent company sells its stock.

An apprehension as to the existence of monopolies in the petroleum industry has been recurring through the years. Analysis is not directed at petroleum pipe lines separately but at their status as a segment of the petroleum industry, particularly to the extent that they are controlled or dominated by the larger integrated companies. An extensive investigation by the federal legislature's Temporary National Economic Commission in 1939 provided considerable factual information as to industry opera-

tion and practices. The so-called "Mother Hubbard" suit, or sectional and functional suits replacing it, brought by the United States against the principal petroleum companies will probably delve further into the industry. The United States Senate's Small Business Committee (The Wherry Committee) is charged with a special concern for the interests of small business and is expected to consider the pertinent aspects of petroleum transportation. Views have been advanced by some critics and writers that some conditions exist in the petroleum pipe line field which have been recognized in other fields of business as being conducive to the exercise of monopoly or oligopoly power. Such conditions include: a large fixed investment is required to produce the service; the plant required cannot be duplicated readily; the producers of the service are organized or quasi-organized for joint action; possibly the service required can best be supplied by a limited number of producers; and the economic efficiency of the existing plants may be very high rendering entry of a newcomer very difficult. The general refutation to such allegations would be that the existence of such circumstances or conditions does not prove that the implied results have followed or logically may be expected to follow.

Some partisan interests in the petroleum industry favor divorcement of pipe lines from integrated company owners on the assumption that an undesirable relationship does exist between pipe lines and parent owners. Non-pipe line owners, comprising principally marketers or refiners who are not affiliated with the large integrated companies, see in divorcement a restriction on a competitive advantage that may presently accrue to a pipe line owner. The general contention is that each function of the industry should stand separately and that

profits in transportation, for example, should not be capable of diversion to marketing activities because such action provides an integrated company with an unfair advantage in the function so aided. In evaluating this question consideration might well be given to the possibility that certain phases of the petroleum industry function best as large-scale enterprises, and no artificial segregation will benefit the over-all economics.

Akin to the last two questions discussed is the general matter of the regulation of pipe lines. To what extent is there regulation, and how effective is it? Regulation may be viewed as it relates to the control of pipe lines as transportation agencies and as business units. The carriers can point to the rules and regulations of the Interstate Commerce Commission and state public utility commissions as evidence of the very extensive governmental regulation of pipe lines. Common carriers, and the bulk of the pipe line mileage is common carrier mileage, appear to be subject to regulation in all essential respects. The critic may question whether such regulation is uniformly effective from the viewpoint of non-pipe line owners' interests. It is here that the question of control of the pipe line as a business unit comes in and the plea for divorcement of pipe lines from shipper/owners is interjected.

Whether or not the distinctive views of the conflicting interests can be reconciled remains to be seen. It is to be hoped that the various questions will be concluded only after a carefully considered evaluation of all factors involved.

Advantages and Disadvantages

Aside from the diverse and conflicting views just recapitulated as to the use of pipe lines, what are the advantages and disadvantages inherent in pipe line transportation as conducted in the United

States? This question may be dealt with from three viewpoints: that of a pipe line shipper/owner, that of a competitor, and from the viewpoint of the public—the common welfare. The shipper/owner is currently using and has been using pipe lines for years, and they have become an integral part of his operations. They have become a commonplace of his way of operating. Pipe lines offer a particularly desirable type of service where oil has to be transported overland in bulk. Weather conditions do not disturb pipe line transportation. Handling of oils is simple and a minimum of labor is involved. Losses in handling oil by this method are small. The transportation service is consistent and certain. The shipper/owner may have an extensive familiarity with the complete transportation situation; he knows what transportation capacity is available, where his oil is, and what delivery schedule can and will be maintained. Under prescribed conditions pipe line transportation is economical. The general prerequisites are that there be a fairly large and consistent volume available for an extended period and that the geography requires overland movement. The shipper/owner may recognize the rigidity of an investment in a pipe line as a disadvantageous feature of this type of transportation. The original investment in a pipe line is large, and the investment is made on the basis of an estimate of future traffic. Such estimates can be inaccurate or completely wrong. Another disadvantage of pipe line ownership to a parent might be the uncertainty that exists as to the future status of subsidiary pipe lines. The possibility of a complete divorcement of pipe lines might raise a doubt in an owner's mind as to the advisability of increasing capital investment in pipe lines.

The relations of alternative transportation methods and agencies with pipe

lines are varied. There is no marked divergence of interests between tanker transportation and pipe line transportation because the bulk of the tanker transportation is owned by the same interests that own the bulk of the pipe line capacity, i. e., the integrated petroleum companies.

Highway transportation is involved with pipe line transportation principally as to the movement of products. The development of truck transportation has accompanied and has been stimulated by the growth of product pipe line transportation because the pipe lines perform the line haul bulk movement and the trucks are used for fanning out the distribution in relatively small quantities.

Over the years, the railroads have lost more and more of the petroleum tonnage to competitive transportation agencies, including especially product tonnage to the product pipe lines. This transfer of business appears to have been made both on the basis of alternative costs and on the basis of service and convenience. As has been pointed out, once a pipe line is constructed, its variable costs are rather low and it is difficult to attract business from a pipe line on a cost basis. The railroads are in a mixed position in that they have a competitive interest on the long distance trunk line movement by pipe line and an interest in supplementing pipe line distribution by handling the shipments from the pipe line terminals in competition with the transport trucks.

Some marketers who are not supplied by pipe line may view pipe lines as a very serious competitive threat to their own position. The growth of product pipe line systems used by a relatively few integrated petroleum companies has caused further apprehension among independent marketers both at the manufacturing level and at the wholesale and retail marketing level. It is for

this reason that the arguments for divorcement or more stringent control of pipe lines has been made as discussed heretofore.

Private business enterprises exist for the two-fold purpose of providing a needed good or service and realizing a business profit for the producer. Is pipe line transportation advantageous to the public welfare and can the industry be run in a manner satisfactory to the public and the owners? The ability of pipe lines to provide a continuity of supply is an especially attractive feature of this method of transportation. To the extent that pipe line transportation is more economical than alternative transportation methods and such economy is passed on to the public, pipe line transportation is advantageous on another score. Competition will, in the long run, tend to compel that a significant portion of economies be passed on to the public.

Petroleum pipe lines undoubtedly have a very important place in the national transportation pattern. Exactly what that place is may require extended con-

sideration. This may involve especially the relation between product-pipe lines and the railroads. Because of the indispensable position of the railroads in national transportation, there may be an over-all desirability in keeping traffic on the rails unless the economies of competitive transportation are substantial. It might be that, if railroad freight rates on petroleum traffic were related more to a cost-of-service basis than to what it has been thought the traffic would bear, the justification for product pipe lines would not be so great as it has usually been in the past.

In the last analysis, the use made of petroleum pipe lines or any other transportation agency or business enterprise must be determined according to the way of life that the people of the country wish to follow. It is essential that the problems involved be clearly defined, be well understood, that adequate factual information be obtained, and that an unhurried and carefully chosen course be selected that will best serve the country's long-run interests.

Frontiers in Metropolitan Planning and Land Policy

By ROBERT M. LILLIBRIDGE*

AS efforts to coordinate public and private investments and to plan for sound land use in the American metropolitan districts move forward, the magnitude of the problem becomes more apparent. The attack on these problems constitutes a field of action as full of promise as was the wilderness frontier.

The public servant charged with the responsibility for social guidance in land use, and certainly the taxpayer, does well to question the progress made to date. As F. J. Osborn suggests in his statement on the future of the metropolitan area,¹ and in his report on American planning,² there is need for orientation toward the total metropolitan problem.

Significance of Growth

Urban America represents the environment of a constantly increasing proportion of the national population. In 1940, 56 percent of a total national population of approximately 130 million persons resided in urban areas and, of that urban population, 75.2 percent resided in metropolitan districts.

McKenzie, in *The Metropolitan Community*, defines the metropolitan region or district and emphasizes its increasingly fluid situation as follows:

"The coming of the motor vehicle and the paved highway, the expansion of the press, and the other agencies of communication, have brought the city and its hinterland into a closer functional relation. The institutional division of labor which formerly characterized the inner life of the city has been ex-

tended to include a wide range of surrounding settlement, effecting what almost amounts to a revolution in the pattern of local relations. This new type of multiple-center community is what is meant by the term metropolitan, or city region."³

The rise in importance of the metropolitan district is portrayed in the data presented by Thompson in his summary of the U. S. Bureau of the Census data for the period 1900 to 1940,⁴ and given in Table I. Although the decennial census

TABLE I—METROPOLITAN DISTRICT AND ALL URBAN POPULATION GROWTH*

| Census | Number Districts Considered | Per cent of Total Urban Population in Metropolitan Districts | Per cent of Total U. S. Population of Urban Character |
|---------|-----------------------------|--|---|
| 1940... | 140 | 75.2 | 56 |
| 1930... | 97 | 72.2 | 51 |
| 1920... | 58 | 63.2 | 46 |
| 1910... | 44 | 60.0 | 40 |

* Source: Columns 2 and 3 from Warren S. Thompson, *op.cit.*, p. 12; Column 4 from Chicago Daily News Inc., 1946 Almanac, Chicago: 1947, p. 309.

definition of metropolitan districts varied to make data somewhat relative, the increase in the number of such districts and the constantly increasing proportion of the total United States population to be found therein is emphasized. The 140 metropolitan districts established by the 1940 U. S. Census are shown in Figure A.

Data for the 44 cities which have been studied since 1900 by the Bureau of the Census will allow more detailed observation of population changes. The 44 districts made large population growth rates along with the national growth rate,

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¹ F. J. Osborn, *The Future of Large Metropolitan Areas* (New York: Regional Plan Association, 1947).

² F. J. Osborn, "Planning Developments in the U. S. A.", *Architects Journal*, February 19, 1948, pp. 176-177.

³ By permission from R. D. McKenzie, *The Metropolitan Community* (New York: McGraw-Hill Book Company, Inc., 1933), p. 70.

⁴ Warren S. Thompson, *The Growth of Metropolitan Districts in the United States: 1900-1940* (Washington, D. C.: U. S. Gov't Printing Office, 1947).

as Table II data indicate, until about the

TABLE II—NATIONAL, AND 44 METROPOLITAN DISTRICT, POPULATION-GROWTH RATE*

| Area | Decade | | | |
|----------------------|---------|---------|---------|---------|
| | 1930-40 | 1920-30 | 1910-20 | 1900-10 |
| Central Cities..... | 4.2 | 20.5 | 23.4 | 33.6 |
| Satellite Areas..... | 13.0 | 48.7 | 31.3 | 38.2 |
| Satellite Urban..... | 7.3 | 40.6 | 30.2 | 35.9 |
| Satellite Rural..... | 28.1 | 68.1 | 34.5 | 43.2 |
| National..... | 7.2 | 16.1 | 14.6 | 21.0 |

* Source: Warren S. Thompson, *op. cit.*, pp. 5, 8.

period 1920-30 when satellite areas and particularly their rural sections grew comparatively more rapidly. Finally, in the period 1930-40, the population of central cities of the 44 districts grew at the rate of only 4.2 percent; satellite urban at the rate of 7.3 percent; and satellite rural at the rate of 28.1 percent. In the 28.1 percent rate-of-growth figure for satellite rural areas is illustrated a vital part of the problem. That figure, as recently highlighted by Riemer,⁵ means

that central city land is now built upon to such a degree that new population growth takes place almost entirely beyond the parent central city. This trend within the decade since 1940 has increased.

Prior to 1920 and in the decade 1920-30, gains were made in population totals for all American urban areas. During that decade, however, as the Chicago data reflect, there was a decided decline in the rate of urban growth and, as a matter of fact, in the national growth as well. The Chicago satellite area population growth rate of 44.9 percent in the decade 1930-40 is greater than the corresponding figure for the 44 districts combined as given in Table II. This rate for Chicago, given in Table III, may in part be accounted for by the lack of annexation of contiguous territory and the increasing inability on the part of

⁵ Svend Riemer, "Escape into Decentralization," *Land Economics*, February, 1948, pp. 40-48.



Figure A: METROPOLITAN DISTRICTS OF THE UNITED STATES, 1940.

Source from which adapted. Warren S. Thompson, "The Growth of Metropolitan Districts in the United States: 1900-1940," (Washington, D. C., Bureau of the Census, U. S. Government Printing Office, 1947).

builders to find adequate sites other than in satellite areas. Residential building statistics for the Chicago district likewise show that the greater proportion of new construction takes place in satellite areas. In 1940, 69 percent of the total dwelling units constructed in the Chicago districts were built outside the city of Chicago while in 1947 the corresponding figure was 75 percent.⁶

Results of a Milwaukee study of population movement from the city to satellite rural regions indicate that production of the fluid city is by no means purely involuntary—due to lack of vacant sites. That study made it apparent that;

"the exodus from the cities is prompted by a general desire to gain the benefits of the more open country rather than by any expulsive force of a given district within the city. People leave the cities because they believe the rural areas are better places to raise children; are less congested; are cleaner and provide larger lots. Only a few are attracted by the promise of lower taxes and cheaper land."⁷

Other income groups, without such mobility, find little reason for leaving the familiar neighborhood. As demonstrated by the Chicago Housing Authority surveys in five selected slum areas involving 2,078 families, 75 percent preferred to

remain in the same neighborhood if redevelopment should necessitate relocation and only 6 percent wished to move to the edge of the city.⁸ In another survey, involving sampling of 19,518 families in a blighted area close to the Loop, 54 percent preferred the same neighborhood and only 2 percent wished to move to the edge of the city.⁹ The families involved in those surveys probably are fairly typical of a great section of the labor pool.

With increasing placement of industrial plants on the periphery of cities, despite the preference expressed for the familiar near-in area by certain elements of the labor pool, in time labor may find it necessary to move, not only to escape unwholesome blighted areas, but to be close to sources of employment. The increase in the number of industrial structures, for the period 1945-47 (immediately following the last war), in smaller towns located within metropolitan districts of industrial character¹⁰ serves to indicate the possibility of labor pool movement. Such industrial location

⁶ Chicago Housing Authority, *Final Report and Tabulations on Occupancy Survey of Three Blighted Areas* (Chicago: CHA, March 31, 1946) and *Report on Relocation Survey for Illinois Institute of Technology and Michael Reese Hospital Clearance Areas* (Chicago: CHA, July 1947).

⁷ Chicago Housing Authority, unpublished data for relocation of families in redevelopment of the West Side.

¹⁰ Commonwealth Edison Co., Territorial Information Department, *Survey of Industrial Expansion* (Chicago: The author, January 1948), p. 1.

TABLE III—CHICAGO METROPOLITAN DISTRICT GROWTH RATE AND BUILDING ACTIVITY SINCE 1940*

| Area | Population Growth | | Per Cent of Building Dollars | | | | | | | |
|----------------------|-------------------|---------|------------------------------|------|------|------|------|------|------|------|
| | 1920-30 | 1930-40 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 |
| Chicago..... | 24.9 | 0.6 | 38.0 | 35.0 | 16.0 | 26.0 | 51.0 | 45.0 | 46.0 | 37.0 |
| Satellite Areas..... | 73.9 | 10.4 | 62.0 | 65.0 | 84.0 | 74.0 | 49.0 | 55.0 | 54.0 | 63.0 |
| Satellite Urban..... | 74.6 | 6.0 | .... | .... | .... | .... | .... | .... | .... | .... |
| Satellite Rural..... | 70.9 | 44.9 | .... | .... | .... | .... | .... | .... | .... | .... |

* Definition of districts beyond city-of-Chicago boundary varies slightly for the two sources. Data for column 3 taken from Warren S. Thompson, *op. cit.*, p. 35: data on percent of building dollars taken from Bell Savings and Loan Association, *1948 Annual Review of New Building*, Chicago, Illinois. Figures do not include some war plant construction or any public housing whose location is more arbitrary than that of normal building. Inclusion of industrial data would not significantly alter the trend as later discussion will indicate.

may be accelerated if the admonitions concerning the atom bomb are heeded.¹¹

Urban redevelopment may help to increase the livability in central areas. But it is doubtful, with the reduction in densities, the displacement of large groups to make way for construction, and the likelihood of an uncoordinated attack on city congestion and air pollution, that vast numbers of our population will again be housed in near-in areas. The transportation revolution granting increased mobility probably will prove more of a determining factor in population changes than will the possibility that functional analysis of metropolitan areas may indicate residential use for near-in areas or the need for salvaging public utility investment.

With an estimated 12,600,000 urban dwelling units required by 1955,¹² additional growth will take place in the various sections of the metropolitan districts. It is thus important to developers and home owners that the basic question involved in metropolitan growth be answered. That question is not how this development of satellite areas can be slowed or stopped and how other areas can be redeveloped per se, but how the growth of both can be directed towards a sound metropolitan pattern.

Present Attack on Metropolitan Problems

Progress and problems involved in realizing metropolitan status for metro-

politan districts have been analyzed by McKenzie and more specifically for the Chicago district by Merriam, et al, in 1935.¹³ More recent national progress along metropolitan lines has been documented by Jones.¹⁴

The usual organizational form for the current attack is the unofficial metropolitan planning association which coordinates the efforts of the participating governmental units. Associations of this type, to mention only a few, exist in the Boston, Chicago, Cleveland, Kansas City, New York, Pittsburgh and San Francisco metropolitan districts.¹⁵ The number of such associations and kindred groups is increasing. Within recent date these organizations have contributed greatly to an understanding of the basic issues.¹⁶ Despite the earnest work of these groups, problems in both the central cities and satellite portions of the districts are increasing in area and intensity.

To provide more effective organization for the direction of growth, it has become evident that the loose organization will not suffice. An official public agency is required. With publication of the Boston Contest awards,¹⁷ acknowledgement was made that as long as the metropolitan district is not a legal entity bound together on a fiscal basis it will be extremely difficult to coordinate public improvement efforts, let alone direct new growth of a private character along sound lines. This is especially the case when metropolitan districts overlap state

¹¹ Tracy Augur, "Planning Cities for the Atomic Age," *American City*, August 1946, pp. 57-76 and 123, and National Security Resources Board, *National Security Factors in Industrial Location* (Washington, D. C.: NSRB, July 22, 1948).

¹² Housing and Home Finance Agency, *The Housing Situation . . . the Factual Background* (Washington, D. C.: HHFA June 1948), p. 10, Appendix B.

¹³ Charles E. Merriam, Spencer D. Parratt and Albert Lepawsky, *The Government of the Metropolitan Region of Chicago* (Chicago: University of Chicago Press, 1933).

¹⁴ Victor Jones, *Metropolitan Government* (Chicago: University of Chicago Press, 1942).

¹⁵ For a full account of the major associations, see: Regional Plan Association, Inc., *Metropolitan Planning* (New York: the author, 1947).

¹⁶ Outstanding recent publications of this type include: Metropolitan Plan Association, Inc., *Guide Plan—Missouri—Illinois Metropolitan Area* (St. Louis, Mo., the author, March 1948); San Francisco Bay Area Council, Inc., *San Francisco Bay Area, Its People, Prospects and Problems* (San Francisco: the author, March 1948); and John E. Vance, *Planning the Metropolitan Districts* (Providence, R. I.: Providence Chamber of Commerce, 1948).

¹⁷ *The Boston Contest of 1944* (Boston: The Boston University Press, 1945 and Carl J. Friedrich and Associates, "Planning for the Greater Boston Metropolitan Area," *Public Administration Review*, Spring 1945, pp. 113-126.

boundaries, as with Philadelphia, New York, Cincinnati or St. Louis. Development work of the recently authorized St. Louis region bi-state public agency will thus be followed with interest.

A few official metropolitan planning agencies are now functioning. The Tri-County Planning Commission concerned with the area about Denver, the Milwaukee County Regional Planning Department, the new regional agency concerned with Detroit, the Saginaw Valley Regional Planning Commission, and the planning agency for metropolitan Atlanta, are representative of these. The advisory regional planning agencies organized under Virginia state law, the Maryland-National Capital Park and Planning Commission, the Allegheny Conference on Community Development concerned with the Pittsburgh area, the Niagara Frontier Planning Board operating in western New York, as well as an increasing number of county planning agencies also work in this field.

Perhaps it is not difficult to understand the lack of direction given private investment in satellite growth occurring with such rapidity when the complex governmental structure involved is considered. According to the Bureau of the Census,¹⁸ the Chicago metropolitan district includes 5 counties, 42 townships, 115 municipalities, 593 school districts, and 66 special districts. The Chicago district complexity of governmental units is by no means an isolated illustration of the condition to be found in American metropolitan districts.

The various municipalities have concentrated in the past upon maintenance and operative functions. As the public works programs have taken on greater

importance, cooperation between units has progressed. But the very complexity of this governmental framework has hindered a unified approach to common problems. There is a correspondingly difficult task in administration of zoning measures by which some guidance for private development might be possible, let alone relate them to a sound metropolitan pattern.¹⁹ The same is true with regard to consideration and approval of subdivision design. Many of the units, with their precarious financial condition, cannot afford trained technicians who are familiar with zoning measures or subdivision design. Zoning, insofar as it is capable of giving vigorous direction, is often completely nullified and becomes permissive rather than regulatory.

The attack upon the Chicago metropolitan problem, in its similarity to that in other districts, may emphasize typical problems and progress. Annexation with its promise of area unification no longer is possible with its implicit threat of added tax burdens to suburbs which lie in the path of central city expansion. That means of area unification has thus been halted, and coordination of planning activities by the association form of organization is now the main source of the metropolitan effort. The Chicago Regional Planning Association has the task of coordinating the efforts of the various official planning bodies. Within a fifty-six-mile radius of the Chicago Loop central business district is the area which the Planning Association defines as metropolitan Chicago. Within this area there function about 50 municipal planning commissions and 145 municipal and 7 county zoning ordinances in the 275 municipalities and 7 counties involved.

¹⁸ 1940 U. S. Census data for all metropolitan districts is given in: *The Municipal Yearbook, 1948* (Chicago: The International City Managers Assn., 1948), pp. 21-22. Original data in: *Population: Volume 1, Number of Inhabitants* (Bur. of the Census, 1942) and *Governmental Units in the United States, 1942*, (Bur. of the Census, 1944).

¹⁹ Guy Greer (editor), *The Problems of the Cities and Towns*, report of the Conference on Urbanism, Harvard University, March 5-6, 1942, pp. 48-50; and Henry S. Churchill, *The City is the People* (New York: Regnal and Hitchcock, 1945), p. 91.

One encouraging effort to reach a solution to problems transcending political boundaries lies in establishment of functional agencies. Since its formation in 1889 the Chicago Sanitary District, along with the Boston Metropolitan District Commission and the Port of New York Authority, have led the advance in establishment of such functional agencies in countless other municipal areas and metropolitan districts.²⁰ The increasing inability of many satellite areas to secure a satisfactory water supply may force another metropolitan functional agency to be developed in the very near future. The establishment of the Chicago Transit Authority and consideration of port and railroad terminal authorities is a continuation of this trend which promises aid with minor disturbance to established governmental units.

Several aspects of public land use help to point out the nature of the problems. When an attempt is made to increase the livability of inlying residential sections through park development, a hue and cry arises over such control of a remaining portion of potentially residential land. When the same park agency hesitates to purchase over-valued improved lands in the midst of the nation's largest slum, due to lack of assurance that the area will continue as a residential community, there again arises a protest.

Another aspect of public land improvement, which involves greater obstacles as the central city is fully built upon, is that of site selection by public housing agencies. In the effort to clear areas of slums comes the need for relocation housing in other sections. With further building upon the few remaining satisfactory sites within jurisdictional boundaries of such agencies, site selection

is an increasingly more difficult process. Frequently, the search results in selection of areas near heavy industry, railroads, or other heavily used areas of such a character that no private investor would consider residential development. As functional areas within the district take on meaning in terms of satisfactory human environment, the decision must be made whether or not public housing investments should be planned on a metropolitan basis to meet, at the moment, emergency needs and, in the long run, to fit into the emerging metropolitan patterns.

In private use of urban lands further increase in residential densities is now generally the answer to the housing shortage due to lack of direction in metropolitan growth. No matter how much more desirable certain elements of Parkchester, as well as public developments of similar character, may be in comparison to the tenements of the East Side, construction of such densely populated residential developments is not only questionable as an investment but a flagrant example of what occurs when adequate social direction is not given metropolitan growth.

When investors hesitate to participate in central city rebuilding, the only alternative consists more and more of participation in peripheral development. Such extensions of the urban conglomeration, when they are unable to dominate or create their own environment, remain largely mere extensions of the urban or suburban sprawl.

One significant recognition of the concept of the metropolitan district and its functional parts is afforded in the current construction of Park Forest near Chicago, by the American Community Builders.²¹ Eventually, this complete

²⁰ Victor Jones, *op. cit.*, pp. 91-97. For realization of the complexity of such agencies, see: Bureau of the Census, *Governmental Units Overlying City Areas* (Washington, D. C.: U. S. Government Printing Office, 1947).

²¹ Philip M. Klutznick, "New Satellite Town of 25,000 Planned," *American City*, January 1947, pp. 82-83.

version of a satellite town, located 30 miles south of Chicago's Loop, will house about 25,000 persons on its 2,500 acres, along with non-nuisance industries and complete community facilities for the residents. The establishment of the town signifies a frank recognition by private investment capital that the financially able families are leaving the central city. And chaotic rural development or rural sprawl is not necessarily a counterpart of this movement. It signifies more than that, however. It means American recognition of the tenets of Ebenezer Howard²² as concretely expounded at Welwyn Garden City and Letchworth.²³ It means more complete recognition than is evident in the Greenbelt residential towns that the metropolitan satellite town of the future is a "town designed for healthy living and industry—of a size that makes possible a full measure of social life."

Aspects of the Interim Solution

It has been estimated²⁴ that about 380 millions of dollars will be required to purchase the 9.3 square miles of blight in Chicago. Altogether, one billion dollars will be required to purchase the land now classed as blight and near-blight. When the vast sums to be spent for land in other American cities to allow redevelopment to begin are considered, the total probable investment appears significant. Without question, sale of such lands at use value to allow an estimated 33 to 75 percent of the land cost to be recaptured, despite restrictions on land use and development and despite the increase in taxes involved through development, means a great subsidy by society. This cost should be heeded as

growth of indiscriminant character proceeds. The rapidly-growing satellite areas within the metropolitan districts and the problems faced therein, resemble in a large measure the blighted areas and their problems. As emphasized by Greer,²⁵ these sections of suburban sprawl are the blighted areas of the future. They may be the cause of additional subsidies in the future.

In satellite areas where building area is now available, if a builder does move into an unimproved section, he has difficulty in blocking out sufficient lands to make a sizable project feasible. Experience with Park Forest indicates that difficulty.²⁶ Single ownership of the Parkchester tract was a determining factor in making that sizeable development possible. The small builder also has land difficulty. The involved ownership and tax condition of much vacant land makes it unavailable to the small-scale builder. Frequently, if such a builder, unable as he is to place extensive utilities in vacant land, does contemplate additions to existing developments, speculative land values add greatly not only to his, but the purchaser's cost.²⁷

In metropolitan areas, or other areas of great population pressure, it is becoming apparent that social measures will be required to make lands readily useable. Thus local and federal aid to reduce speculative land values to use values, and to provide assistance in securing sizeable areas certainly is timely.

Acceptance of the police power for guidance of land use has benefited the community while it has placed some restrictions upon individual use of property.

²² Guy Greer, "Urban Redevelopment—Legal, Fiscal, Educational Barriers Block the Way to Action," *Journal of Housing*, February 1948, p. 30.

²³ Harry Henderson and Sam Shaw, "City to Order," *Colliers Magazine*, February 14, 1948, pp. 16-17.

²⁴ Sir Raymond Unwin, "Land Values in Relation to Planning and Housing in the U. S.," *Journal of Land & Public Utility Economics*, February 1941, pp. 1-9.

²² Ebenezer Howard, *Garden Cities of Tomorrow* (London: Faber & Faber, 1946).

²³ For further detail on these pioneering efforts, see: F. J. Osborn, *Green-belt Cities* (London: Faber & Faber, 1946).

²⁴ Chicago Housing Authority, *Cost of Acquiring Slum Land* (Chicago: CHA, 1948).

Measures which would allow guidance in metropolitan land use frequently are of a rather minor character, but when they are used in a coordinated program they may assume the nature of positive controls.²⁸ The major means of land use control which hold promise are these.²⁹

1. Zoning, when it is preceded by adequate planning and given adequate regulation, can assume the nature of a real control. However, today it assumes largely a permissive character and becomes a political toy.
2. Planning requirements necessitating approval of plats by local planning commissions, where such exist.
3. Minimum provision of facilities required as a condition of approval of plats by the state health department, or by a planning commission, or both. Certain states have effectively regulated subdivisions by such means but, to be effective, high standards would be required.
4. Demonstration of need for further platting, as a supplement to the more commonly accepted methods by which subdivision is partially controlled. The state of Washington has effectively used such legislation to restrict indiscriminate platting on the urban fringe.

These measures involve control of land use and, if wisely administered, would promote sound land use. It is clear that to date these measures have proven inadequate. Part of the difficulty lies in lax administration of zoning ordinances and other control measures. It is questionable, however, if control alone is the needed element. With extension of the aids for blighted and urban fringe development now beginning to be used, it is apparent that the active encouragement and leadership needed in the coordination of investments on a metropolitan basis may be evident.

²⁸ American Institute of Planners, Committee on Urban Land Policies, "Report," *Journal of the A. I. P.*, April-May-June 1946, pp. 38-39.

²⁹ This summary in large part is given in the study by Malcolm Dill, *Planning for the Future of the Harrisburg Area* (Harrisburg, Pa.: Municipal League of Harrisburg, Pa.,) 1939-40.

³⁰ Interprofessional Urban Planning Committee, "Out-

Analysis indicates that there are two sections to the legislative and administrative program. The first section deals with planning for sound land use, while the second deals with land policy—that land may be available in sizeable sections at use value and developed in accordance with metropolitan needs. The success of the functional agency to reach beyond the limited jurisdiction of local political units indicates the possibilities in such planning and land policy agencies. Possible programs for such agencies will be outlined herein.³⁰

The task of the metropolitan planning agency would involve coordination of existing planning agency efforts. However, the task would only begin with such coordination as first of all the metropolitan district needs definition. Functional areas of the district need to be determined in their present form as to the trend of development, and in their optimum rational form.³¹

Population shifts now in process require clarification. To aid the rational shifting of population as the transportation range increases, the unincorporated and unimproved areas of the district require attention. New satellite growth needs guidance so that existing towns or future towns will not increase to such size that preferred social relationships are hindered.

The task of the planning agency thus involves study of probable area and population size limitations for existing and new settlement.³² Studies tend to show a somewhat longer life for rural as contrasted to urban dwellers,³³ and other studies give the picture of family and individual integration in various aspects

line Program for Urban Planning and Development," *Landscape Architecture*, April 1947, pp. 108-111.

³¹ R. D. McKenzie, *op. cit.*, p. 71.

³² Lewis Mumford, *The Culture of Cities* (New York: Harcourt, Brace and Company, 1938), pp. 487-488.

³³ T. N. E. Greville, "Rural Life Span Longer Than Urban," *Domestic Commerce*, August 1943, p. 16.

of American urban life.³⁴ Basic research related to social life as well as related to optimum economic development of the urban physical plant is needed.

The task of the metropolitan planning agency as it guides urban extension would involve all portions of the district but with emphasis upon three areas.³⁵ This would necessitate land planning approval. The first area would involve new satellite towns.³⁶ The second area would involve new growth of existing settlements, and the third, those sections of existing settlements requiring complete redevelopment or conservation to allow them eventually to conform with their proper functional status.

Zoning of all lands within the metropolitan district together with provisions for approval of all urban extensions, when combined with an active land policy, would help to assure economic development. Preparation of zoning measures would be a function of the planning agency.

The various tasks undertaken by the metropolitan planning agency require keen perception of trends. The final task thus would involve checking trends in land use, reviewing continually the form of metropolitan development and adapting plans to the changing demands of contemporary urban life.

Measures by which a land agency could promote economic development of the metropolitan district would be to a large extent an amplification of redevelopment measures now in use. To undertake the work of a metropolitan land agency in an adequate measure, aid, including financial aid, probably would be required of

the larger social units—the state and federal governments—to allow full potentialities for these areas of national importance. Control of the program within each metropolitan district, however, needs to be retained locally if awareness to requirements of the unique situation is to be maintained. Citizen interest and responsibility would then more likely be the paramount force in land policy administration.

The metropolitan planning agency, in forecasting the probable extent and form of growth, would set the stage of action by the land agency in its effort to coordinate the numerous public and private investments. Many areas considered suitable for immediate development by the planning agency would be purchased immediately by private builders for development. Other areas not suitable for immediate development could be acquired by the land agency and held until growth demands their use. These might include blighted areas requiring redevelopment, land peripheral to urban settlement or suitable for new satellite towns. Tax delinquent lands might also be available.³⁷ Arrangements for provision of basic public improvements would involve principally transportation, water, sewer, and other utilities for new satellite towns where existing public agencies are not prepared to undertake the work.

Most areas designated for new growth by the planning agency, if well developed, should be assured of investment stability and could be sold outright. Proceeds from sales could be placed in a revolving fund to keep necessary financial aid to a minimum. Many critical areas within the metropolitan district, however, may be subject to recurring land use changes.

³⁴ Robert C. Angell, "The Social Integration of American Cities of More than 100,000 Population," *American Sociological Review*, June 1945, pp. 335-342; and Ernest R. Mowser, "The Trend and Ecology of Family Disintegration in Chicago," *American Sociological Review*, June 1938, pp. 344-353.

³⁵ For a full treatise on metropolitan development and its implications, see Eliel Saarinen, *The City, Its Growth, Its Decay, Its Future* (New York: Reinhold, 1943).

³⁶ Probable type of development described in F. J. Osborn, *Green-belt Cities*, op. cit., p. 48.

³⁷ Full treatment of this subject is given in: Albert Miller Hillhouse and Carl H. Chatter's *Tax-Resorted Properties in Urban Areas* (Chicago: Public Administration Service, 1942).

The example of the blighted areas and social cost involved today in redevelopment may be recalled in this regard. To eliminate a great portion of the possible eventual redevelopment costs to society and reduce the investment risk to the private builder and home owner, probably certain areas may logically be developed on a long-term lease basis. Long-term lease has been an established practice in central business districts. That practice is being extended on the west coast³⁸ to aid in lowering the initial down payment necessary for home ownership. Revenues available through such leases eventually may allow reduction to be made in the property tax and add considerably to the stability of the local government fiscal structure. In such a land program application could be made to the land agency for building sites. Builders of large-scale developments could build substantial sections of new towns, peripheral-growth or redevelopment projects, while small-scale builders would be able to integrate their efforts fully in a common goal at minimum investment risk.

Unwise extension of the urban physical plant can be checked by acquisition of land at the periphery of the urban area. Some of these peripheral lands held as a permanent reserve might be made available for public use in the form of parks or forest preserves or made available for private uses compatible with the purposes of a greenbelt. The land agency eventually might also function as the title and land acquisition agent for public

agencies within the metropolitan district. Zoning measures, as the control phase of the program, also may be administered on a metropolitan basis by such an agency when the long-range program is effective.

Considerable data have been assembled on the subject of urban land policy as it has been or is being practiced in Europe,³⁹ and as applied in past times in American cities⁴⁰ or as it may apply to sound land control in American cities.⁴¹ However, we can be assured that the details of the American answer to this problem probably will be quite indigenous and unique considering the prevalent attitude toward land. The increasingly disastrous results to urban investment due to lack of basic guidance may be expected eventually to bear weight in this regard. The urgent need for an adequate urban land policy has been a prime consideration of the American Institute of Planners, Committee on Urban Land Policies, and the Inter-Professional Urban Planning Committee, as well as a few other groups. Awareness of land policy as an important determinant in housing and planning progress is required on the part of a much larger segment of American society before the program suggested for a metropolitan land agency can become effective.

With proper administrative guidance given the program, the present largely-ineffective efforts of land use control might be replaced by a program having both positive and control phases. Leadership might be given in the solution of

³⁸ Urban Land Institute, "Interesting California Projects," *Urban Land*, February 1948.

³⁹ Ernest M. Fisher and Richard U. Ratcliff, *European Housing Policy and Practice* (Washington, D. C.: Federal Housing Administration, 1936), pp. 47-51; Ministry of Town and Country Planning and the Secretary of State for Scotland, *The Control of Land Use* (London: H.M.S.O., 1944); and National Housing Agency, Division of Urban Studies, *Some Elements of Urban Land Policies in Certain Other Countries* (Washington, D. C., NHA, 1944), Bulletin No. 11, mimeo.

⁴⁰ The following source, the most complete historical treatment of American urban land policy, unfortunately has never been published: George Joseph Stigler, *Some Economic Aspects of Municipal Land Policies of American Cities*, unpublished thesis submitted School of Commerce, Northwestern University, Chicago, June 1932.

⁴¹ Harold S. Buttenheim and Philip H. Cornick, "Land Reserves for American Cities," *Journal of Land & Public Utility Economics*, August 1938, pp. 254-265; and National Resources Committee, Urbanism Committee, *Urban Planning and Land Policies*, Vol. 2 of *The Supplementary Report* (Washington, D. C.: Government Printing Office, 1939), Part III, "Urban Land Policies," pp. 211-366.

problems which cause hesitancy and confusion in land use, as the basic decisions as to form of the metropolitan pattern are left to chance.

Aspects of the Fundamental Solution

A functional approach to the metropolitan problem does allow a basis for action—but it remains a partial and not a final basis. Such a solution will obviate disturbance to the existing political interests. Creation of more governmental agencies, however necessary the services may be, will add to the overlapping governmental structure. Nor do such overlapping governmental units make for economy when reduction in the tax bill needs to be a prime factor in introducing any metropolitan proposal.

Federation of existing political units within a metropolitan governmental framework, and use of functional agencies, will suffice for a time. Lessening of local patriotism and full realization of the interdependence of all within the district should make possible a more simplified political structure. When the eventual political structure takes form, the various functional agencies could become integral components of that structure and allow maximum coordination of governmental activities within the district.

With continued expansion of the economy within the various metropolitan districts will come growth of private investments as well as the basic public investments. To keep the investments at maximum value over the years the individual investor and society need to be aware of the basic errors in past development. They need to be aware of governmental costs involved in blighted areas as against taxes collected. Also involved are the incalculable personal and social costs in unproductive lives conditioned in blighted areas of today and tomorrow. Suburban sprawl as the altogether proba-

ble setting for future drastic land use changes likewise represents unnecessary costs in frequent unwise provision of public improvements with attendant excessive maintenance costs. They need to be aware of the possibility of social direction which to a large extent may alleviate investment risk, aid in establishment of a new and more stable metropolitan fiscal base, and make possible future metropolitan growth of an enduring character. They need to be aware of the basic decision to be made as efforts continue to redevelop areas of urban blight—whether the policy shall be characterized by foresight as regards urban land use changes with the possibility of minimum social investment over the long period, or continue with current public land policy which usually attempts to rectify errors in urban land use with tremendous government subsidies, in all probability to be repeated every time a major land use change occurs.

All aspects of social direction to land use within such complex and intensively used areas as represented by metropolitan districts need to be clearly presented to society as it attempts to appraise these public policy decisions. Public discussion, not confined to academic halls alone, will aid clarification of the problems and objectives. The legislative programs may include: recognition of the metropolitan district as a legal entity; legal sanction for full assumption by the districts of their responsibility for sound direction of growth; and federal and state recognition of the reality of the metropolitan pattern of life and assignment of funds on that basis as an alternative to fostering an archaic urban pattern and further entrenchment of localism.

In furtherance of a legislative program involving basic social decisions for areas of critical importance to the nation, opportunity is ahead. With the oppor-

tunity will come the task of awakening to the issues involved. Not only legislative issues but issues involved in administration of planning and land policy will require vigilance on the part of all if the benefits of social direction are to be real and to aid individual initiative to continue unimpeded the work ahead in metropolitan development.

Exploration of the possibilities ahead in metropolitan planning and land policy present a challenge to all professional groups, and particularly to those con-

cerned with housing and planning. In the past generally the professional groups have been content to remain as technicians—to analyze the problems but hesitant in solidifying public opinion behind objectives. Now they may be called upon to guide the political representatives and the average citizen. These groups may lead also to solutions which will allow a fundamental attack upon the problems and allow investment of an enduring nature on the new frontier—metropolitan America.

A Cultural Evaluation of the Family Farm Concept†

By HARALD A. PEDERSEN*

AGRICULTURAL economists and rural sociologists have devoted considerable attention to determining the elements which the American farmer considers important in the organization of his farm. Out of this research effort the concept of the family farm has emerged. As yet, the concept is nebulous and tentatively defined.

A consensus as to the minimum requirements of a definition of the family farm was approached in a report which defines the family farm in terms of three traits.¹ They are: (1) The entrepreneurial functions are vested in the farm family. (2) The human effort required to operate the farm is provided by the farm family with the addition of such supplementary labor as may be necessary either for the seasonal peak loads or during the developmental or transitional stages in the family itself. (The amount of such regular outside labor should not provide a total labor force in excess of that to be found in the

family of "normal" size in the community.) (3) The farm is large enough, in terms of land, capital, modern technology, and other resources to employ the labor resources of the farm family efficiently.²

This statement defines the family farm in terms of its functions rather than in terms of size in acres or in labor requirements. Subsequent research in the area of family farm policy places greater stress on the derived security. One of the tenure arrangements by which the family acquires security is through the provisions for passing the farm on within the family from one generation to the next.³

The Purpose

The purpose of this analysis is to evaluate the concept of the family farm and the place of succession in this concept as observed in the performance and attitudes of farm people from two ethnic

"efficiency standard" or a "normal family" labor force which is so stringent that only a small fraction of the farms will be included.

² *Loc. cit.*, see footnote 2. The concept of efficiency as used in the definition is defined as follows: "The labor resources of a family farm are deemed to be employed efficiently when the rewards for their efforts are equal to the rewards for comparable human efforts in other occupations. Rewards in this context are in real terms in contrast to monetary rewards and include the value that members of the farm family place on leisure, working close to nature, "independence," and other nonmonetary values ascribed by them to farming."

³ K. H. Parsons, "The Succession of Farms as a Field of Research," (unpublished paper) Madison, Wisconsin, February 1948;, "The Succession of Family Farms: Some Problems and Suggestions," a statement prepared for the National Convocation on the Church in Town and Country, Des Moines, Iowa, November 12-14, 1946; K. H. Parsons and Elliot O. Waples, *Keeping the Farm in the Family*, Research Bulletin No. 157, University of Wisconsin, Madison, September 1945; E. B. Hill and others, *How to Keep Your Farm in the Family*, Special Bulletin No. 357, Michigan Agricultural Experiment Station, East Lansing, August 1949; Leonard A. Salter, Jr., *Land Tenure in Process*, Research Bulletin No. 146, University of Wisconsin, Madison, February 1943.

† This analysis is part of a more inclusive study of acculturation by the author, *Acculturation Among Danish and Polish Ethnic Groups in Wisconsin*, Ph.D. thesis (unpublished), University of Wisconsin, 1949. The comments and criticism of George W. Hill, William H. Sewell, Raymond J. Penn and others at the University of Wisconsin were invaluable to the writer in the conception of the central problem of this paper.

¹ Joseph Ackerman and Marshall Harris, (ed.) *Family Farm Policy*, Report of the Conference on Family Farm Policy, University of Chicago Press, 1947, p. 389. (Conference held at University of Chicago, February 1946.) The committee failed to arrive at a complete agreement on this definition. Four of the nine committee members questioned one or more of the critical concepts in personal comments appended to the committee report. Disagreement within the committee centered around the "efficiency standard" and the "normal family" concept. Whereas the committee estimates that less than 20 percent of the farms in the United States could be classified as family farms by this definition, two members of the committee in a joint supplementary statement contend that ". . . nearly two thirds of the 6 million farms tend to be family farms." (see p. 403.) The implication is that the definition of the family farm should be derived from the farmer's evaluation of his farm and should include the majority of the farms rather than be delimited in terms of an

groups in a dairy farming area. Specifically, the study attempts to answer the questions: (1) Do the farm operators in the survey area have sufficient equity in the farm to control its operation effectively? (2) Does the family supply the labor necessary to operate the farm? (3) What is the composition of the family labor force and is the farm large enough to make efficient use of this labor force? (4) What are the plans of the operator for retirement and do these plans include provision whereby one of the children will succeed as operator of the home farm? (5) Have the farmers in the two ethnic groups made different adjustments with respect to these traits? (6) Are the two ethnic groups approaching a uniform pattern of behavior which tends to incorporate the elements of the family farm?

The Design of the Study

The farm families selected for study were chosen from two ethnic groups in the Central Wisconsin Dairy Farming Area.⁴ All farms in the sample are located on the more level phases of Spencer Almota soils. Incomes from the sale of milk accounts for over 60 percent and from the sale of livestock and livestock products for 95 percent of the total income of farms in the area. The primary central market for farm products is Chicago. The farms are all located in the same county and hence are served by the same educational and agricultural agencies. Finally, both ethnic settlements were established in the early 1890's and the farm families have experienced the same variations in business and climatic conditions.

During their nearly 60 years of history

in the area the Danish-Lutheran group increased to a maximum of 125 farm families in 1910 and subsequently declined to 63 farm families in which at least the head of the household was of Danish stock at the time of the survey in 1947. Of these, 59 farm families are included in the survey, including 20 with immigrant and 39 with native-born family heads. The Polish-Catholic group reached a maximum of slightly over 200 farm families in 1910 and has maintained this number since that time. A random sample of 20 farm families in which the family heads are immigrant and 39 farm families in which the family heads are native born was selected from the 206 farm families in which the family heads are of Polish stock. Immigrant family heads account for approximately 35 percent of all family heads in both the Danish and the Polish ethnic groups.

Entrepreneurship

One criterion of the extent to which the entrepreneurial function is vested in the farm operator is tenure. Some tenants have little or no control over the land they use. The amount of control exercised by the operator increases as he moves up the tenure scale and the mortgage-free, owner-operator has the most complete control.

Only five percent of the survey farms are tenant-operated and only one of these is from a non-related landlord. Owner-operatorship is equally prevalent among the two ethnic groups. However, in the Polish ethnic group the tenant farms are all operated by the younger second-generation, or native-born farmers.

Sixty percent of the survey farms are at the other end of the entrepreneurship continuum. They are mortgage-free, owner-operated farms. Here, too, the

⁴ For a detailed statement of the selection of the sample and the method of analysis see, Harald A. Pedersen, *op. cit.*, p. 18-40.

difference between the two ethnic groups is not significant.⁵

The encumbered farms, which account for the remaining 35 percent of all farms, include farms against which there is a commercial mortgage, farms operated under a purchase contract, and farms operated under a pension mortgage.⁶ Nearly 70 percent of the Danish operators on mortgaged farms have reduced the initial mortgage by one half or more. This is the case for less than 50 percent of the Polish operators on mortgaged farms. A further distinguishing difference between the two ethnic groups is that 25 percent of the second-generation Polish operators currently have a pension mortgage against the farm. This was true for only 10 percent of the Danish second generation farms. One Danish farmer, in addition, is acquiring the home farm under a purchase contract whereby the parents receive 25 percent of the milk check but are not living on the farm.

The farmers now operating under a pension mortgage and those who formerly operated under this arrangement are agreed that this is more limiting than a commercial mortgage. The former owner and operator frequently finds it difficult to relinquish entirely the management of the farm, when he continues to live on the farm and is in daily contact with the operator. A significantly larger proportion of Polish farmers are acquiring the home farm through a pension mortgage than are Danish farmers.

The attribute which most operators consider the primary advantage of farm-

ing is independence. The operator values the privilege of determining both the time and method of performing specified operations. The limitations placed on this independence by the requirements of good husbandry do not rankle half as much as the need to punch a time clock. The entrepreneurial function, the right to manage the farm, is a value closely guarded by both the Danish and Polish operators.

Except for the small fraction of operators on farms operated under a pension mortgage and the tenant farms, the Danish and Polish farmers have sufficient equity in the farm to effectively control its operation. The farms fulfill the first requirement of the definition of the family farm, namely, that the entrepreneurial function be vested in the farm family. Conversely, the entrepreneurial function is one of the values which makes owner-operatorship a desired status in each group. More pension mortgages are in effect among Polish farmers than among Danish farmers and the operators affected find their freedom limited by this arrangement. Some are willing to accept this limitation in view of the prospect of ultimate ownership.

Labor Supply

The second criterion specified in the definition of the family farm is the requirement that the farm family must supply the labor needed to operate the farm. The limiting factor in the definition is the "normal family" concept.

further supported by the expressed attitudes of the operators. The Polish farm operator would mortgage his farm only as a last resort. The Danish interviewee on the other hand made his negative or affirmative answer contingent upon the general price level of farm commodities, equipment, and land. The consensus of the Danish group is that there is no reason for shying away from a mortgage if it appears to be a sound business proposition.

* All agreements under which the son has taken over the operation of the parental farm and which are contingent upon a support clause are classified as pension mortgages whether or not they have been written up as legal mortgages.

⁵ The indication is that the Polish farmer is more intent on getting the mortgage paid off than is the Danish farmer. Whereas 60 percent of the Danish immigrant farmers are mortgage-free owner operators, 95 percent of the Polish first-generation farmers are in this category. Similarly, 41 percent of the Danish second-generation operators are mortgage-free owners while 51 percent of the Polish native-born group have paid out the mortgage. This is more significant when we observe that the latter group is on the average nearly 10 years younger than the Danish native-born operators. The empirical evidence on performance is

This concept recognizes the variation in family size, both in terms of absolute numbers and in terms of labor force, depending on the age of the operator and of the operator's family.

Couched in terms of the farm family life cycle, the pre-school family is the smallest both in total number in the family and in labor force. The school family is the largest in total number, but is still short on labor force. The all-adult family has the greatest labor force and hence is the most productive stage in the family life cycle. Finally, as the children leave home, the family declines in size and in productiveness.

Operators on the survey farms average 51 years old. However, 90 and 95 percent of the Danish and Polish first-generation operators, respectively, are 50 years and older. The second generation Polish operators are significantly younger than the second generation Danish operators. The mean age for the former is 40 years and only 5 percent have passed their 50th birthday. The Danish second generation operators average 49 years and 46 percent are 50 years and older.

Fifty-six percent of all operators are farming without help and 40 percent have the assistance of one or more sons, 14 years or older, on the home farm. Hence, only 4 percent have hired labor on the farm. The Danish operators with 5 percent using hired laborers do not differ significantly from the Polish operators with 3 percent.

However, in terms of total labor supply available on the farm there is a significant difference between the first generation Danish farmer and the first generation Polish farmer. Seventy percent of the Danish immigrant operators do the work on the farm without assistance as compared to only 15 percent of the Polish immigrant farmers. Conversely, 75 percent of the latter have the help of one or

more sons 14 years or older as compared to only 25 percent of the former. If the total labor force is measured in man equivalent units, the mean number of units for the first generation Danish operator is 1.0 and for the Polish 1.8 units.

The second generation Danish operator with 1.4 units does not have a significantly smaller labor force than does the second generation Polish operator with 1.5 units.

On the survey farms the farm family supplies the labor required to operate the farm, but the labor available is somewhat less than the labor supply of the "normal family" in the area.

Characteristically, the labor supply consists of the father and a son. Among the younger, second-generation operators the son is not old enough to be considered a full man-equivalent labor unit. The sons of the Danish operators do not remain on the farm beyond school age, so the labor supply on the farms operated by the older first-generation operators consists of only one man-equivalent unit. In contrast, among the Polish operators one son, characteristically, remains on the farm and the labor supply consists of approximately two-man equivalent units.

Labor Requirements

The definition of the family farm implies a minimum and maximum size. The lower limit is that size below which the labor resources of the farm family can not be used efficiently with the result that the farm family must be satisfied with a subsistence level of living. The upper limit is that size above which a family of normal size is unable to handle the work effectively without the continual aid of outside labor.

The farms which were enumerated range in size from a lower limit of 18 acres to an upper limit of 240 acres. Within this range the 118 farms are dis-

tributed with 22 in the smallest-size group of less than 60 acres, 47 in the group 60-99 acres, 41 in the group 100-179 acres, and 8 in the largest group with 180 acres or more per farm.

The operators of the small farms consider themselves part-time farmers. Old age and off-the-farm employment are equally important in limiting the labor input on the farm. Ill-health is a contributing factor but considerably less important than the other two. The labor requirement on these farms will not employ a man full time and the farm income approaches the subsistence level.

The operators of the small farms are predominantly older men, due to the preponderance of retired farmers among the small-farm operators in the Danish ethnic group. Ten operators, 8 Danish and 2 Polish, are 60 years old or more. Seven of the 10 have retired to the present farm from larger farms or from non-farm occupations. For the remaining three the present farm constitutes their first and only venture into farm ownership, begun more than 25 years previously. One operator not yet 60 has retired to the present farm from a larger farm. All 11 operators consider the present farm their retirement home.⁷

The labor requirement of the medium sized farm, 60-99 acres, represents a close approximation to the labor output of one man. The farmers do not use hired labor and, characteristically, one man does the work on the farm except for exchanging work with neighbors on jobs that can be accomplished more easily by two men working together.

On 13 of the 47 farms sons, 14 years or older, are living at home and helping

either full-time or part-time with the work on the farm. Eleven of the 13 farms with sons at home are operated by Polish operators. Furthermore, only one Polish operator, 60 years or older, does not have a son at home; whereas, all the Danish operators, 60 years or older, are doing the work alone.

A marked difference is observed between the two ethnic groups when the farmer's evaluation of the farm is associated with the age of the operator. Six of the 11 Danish farmers, who state that the labor requirements of the farm are more than they can handle, are 60 years or older. Two of these have curtailed their operations sharply in the postwar years. The six operators include all but one of the Danish farmers past 60. In contrast, only two of the 6 Polish operators past 60 consider their farm too large.

The large farms, ranging in size from 100 to 240 acres, approximate the concept of the family farm. Operators in both ethnic groups have interested their sons in remaining on the farm. Four operators, all on farms with 180 acres or more per farm and no sons of their own old enough to help, are using hired labor. The mean farm for this group, approximately 160 acres, requires the labor of two men and furnishes sufficient income to justify their devoting full time to it.

The farm they are now operating is just about the right size, in the opinion of 41 of the 49 farmers. Three Polish operators, all part-owners, consider the farm too small but would be satisfied with it if they owned all the land and did not have to pay out a portion of the crop in rent. Five operators, two Danish and three Polish, say the farm requires more work than they are able to accomplish with the present labor supply.

Sons 14 years old or more are still living at home and helping with the farm work on 26 farms. Though the difference

⁷ The utilization of three 40 acres farms, not included in the survey, as retirement residences by Danish farmers should be noted. The "operators" have sold out the entire inventory of livestock and equipment and turned the farm into hayland, thus taking the final step in the progressive reduction of the labor requirement on the farm.

between the Polish and Danish farmer is not as marked in this group as it is in the one-man farm group, the Polish farmers on the large farms are more successful than the Danish farmer in keeping the boys on the farm. Fourteen Polish and twelve Danish farmers have boys at home helping with the farm work.

The two ethnic groups do not differ significantly in the mean size of farm when this is measured in terms of acres in the farm or in terms of acres in cropland. The mean size of farm for the survey group is 100 acres with 44 acres in cropland. However, if the farm size is evaluated in terms of animal units or in terms of productive man work units required, the farms operated by Polish farmers are significantly larger than the farms operated by Danish farmers. The most marked difference is between the two first generation subgroups.

The farms operated by Danish immigrants have 24 animal units per farm and require 280 PMWU as compared to 32 animal units and 382 PMWU for the farms of Polish immigrants. Furthermore, the farms of first- and second-generation Polish farms are the same size; whereas, the farms of second-generation Danish operators are significantly larger than the farms of the first-generation Danish farmers, both with respect to the number of animal units and the PMWU required on the farm.

Nearly 20 percent of the farms in the survey group are definitely below the minimum size implied in the definition of the family farm. The operators of these farms consider the units smaller than the minimum required to occupy a man full time and assure him an adequate return for his labor. Approximately 40 percent more are borderline, leaving the 41 percent in the largest group which can definitely be classified as family farms. The operators of farms in the two largest

groups consider their farms adequate. However, 50 percent of the Polish operators and 92 percent of the Danish operators in the intermediate group are doing the work alone without help from sons or hired labor. Hence from the standpoint of requiring the labor of a family of "normal size" the intermediate group also falls below the minimum size.

Efficiency of Operation

The ratio of the labor available to the labor required on the farm gives a comparative measure of the efficiency of the operation in the utilization of labor. The efficiency index for the entire group is 241. For all Danish farmers the ratio is 242 and for Polish farmers it is 240. These summary measures do not show a marked difference between the two groups; however, if the ethnic sub-groups are considered separately, marked differences appear.

Unit efficiency, normal employment for one man throughout the year, falls within the index range of 240-260. The Danish immigrant operators, hence, with an index of 277, are over-employed. They receive more than the normal return for their labor and are the most efficient in the utilization of labor. The Polish second-generation sub-group at 262 approaches the normal range. The Danish second-generation at 227 and the Polish first-generation sub-group at 209 fall below the normal range.

The most important factor contributing to the difference in the operating efficiency is the fact that a larger proportion of the families of Danish immigrant farm operators are decreasing in size. Sons are living at home on only one-fourth of the farms. The majority of the households consist of only the operator and his wife. The mean size for the group is less than 3 persons per household. In contrast, the mean size for the families of

native born operators is 4 persons per household.

In the process of retrenchment for the family decreasing in size there is a tendency to maintain the farm income at as high a level as possible. Each move toward retrenchment is delayed just another month or just another year keeping the margin between the labor supply and the labor requirement at a minimum. In contrast, the program of expansion for the expanding family is a step behind the labor supply. The carrying capacity of the land acts as a limiting factor to the expansion program. Sooner or later the farmer must acquire additional land if he is to expand further. The additional land may be rented in by the farmer, or it may be purchased, or he may find it necessary to sell the present farm and move to a larger farm if there are no parcels of land of the right size adjoining his own farm which are for sale or rent. In any case the labor requirement on the expanding farm tends to fall behind the labor supply.

Among the Danish farmers 23 percent of the native-born operators are renting additional land and 44 percent have a mortgage on the farm, both of which indicate that they are expanding, or have expanded, their operations. Among the immigrant operators the proportions are 10 and 35 percent, respectively, indicating that the farmers in this group have reached their maximum expansion and some have begun to retrench.

The difference between the two subgroups is further demonstrated by the farmland per cow ratio and the cropland per cow ratio. The retrenchment or expansion is effected by varying the livestock inventory on the farm. The immigrant operators average 9 acres of farm land for each milk cow and 4 acres of crop land. The native-born operators average less than 8 acres of farmland and 3 acres of cropland for each milk cow.

The dairy farm is a flexible economic unit which can be expanded or contracted, within limits, to utilize the available labor without changing the physical base, in terms of acres in farmland or cropland.

Among Polish operators the farm enterprise is a family undertaking and it is an accepted fact that one or more of the boys will remain at home to help with the farm operation. After the father has retired from active participation in the farm work, the responsibility for getting the work done is passed on from the oldest to the next oldest son until the youngest finds himself stuck with the job because there is no one to succeed him. The immigrant operators have large families. The mean number of children born to the wife of the operator is 7, and the mean size of household is 4 persons. Further, the immigrant operators do not, characteristically, have others than the children living in the home. Hence, there are at least two children living at home in the households of the immigrant operators. The son operating the farm is training the next oldest to take over the task of running the farm. This arrangement results in an excess of labor until one of the sons finally takes over the farm.

There is little difference between the farms of the immigrant operator and the native-born operator, except that the latter farms are more efficient. The native-born operator, especially if he takes over the farm from his father or father-in-law, acquires the farm as a going concern which normally was able to utilize most of the labor of two men. Comparing the mean size of the households, 5 persons, and the labor force, 1.46 man equivalent units, it is apparent that the operator's children are not yet old enough to be considered a part of the labor force and the father, if he is still living, is no longer able to assist with the

farm work. The adjustment is made not by decreasing the size of the farm but by lengthening the work day or in some other way increasing the labor output of the operator thereby increasing the labor efficiency of the operation.⁸

Another indication that the farms are operated to near maximum capacity is that there is slight difference between the farmland and cropland per cow ratio on the farms of the two groups. The farmland per cow ratio is 5.5 and 6.7 acres on the farms operated by immigrant and native-born operators, respectively, and the cropland per cow ratio is 2.3 and 2.7 acres.

In general, there is a satisfactory balance between the available labor force and the labor requirements on the survey farms. The variation in efficiency observed between first generation Danish and the first generation Polish operators is indicative of a marked difference between the two groups in their approaches to retirement.

Method of Retirement

The first Danish settlers when they retired from farming sold out and moved into the village. The row of houses built on one-acre or two-acre lots on either side of the road from the church to the village remain as evidence of this method of retirement. Similarly, numerous houses in the village were built by retired farmers.

The prolonged agricultural depression following 1920 forced the farmers to

⁸ Frequently, the wife of the operator helps with the field work during the peak labor demand periods, thus enabling the farmer to get the work done while the weather is right. The contribution of the wife may consist of doing the chores during the spring work season, or by driving the tractor during the haying or harvest season. The contribution of the wife has become more specialized in recent years; that is, it is only on specific jobs that she will help the operator, and then only during periods of peak labor demand. Even so, it does add to the labor available on the farm with the possible result that the efficiency of the farms when compared to other nationality groups is over-estimated.

abandon this method of retirement. The capital reserve represented by the land, buildings, livestock, and equipment is no longer sufficient to assure them an adequate retirement income.

The new adjustment worked out is one of progressive retirement on the farm. Utilizing the flexibility of the dairy farm, the retrenchment is frequently accomplished without changing the total acreage in the farm. As the farmer's ability to get the work done diminishes, the man-hours of labor required on the farm are reduced. Currently, the first reduction frequently is accomplished by mechanization. Adjustments are then made in the cropping system. Corn is replaced by small grains and hayland and eventually the entire acreage is converted to hayland. This adjustment in the cropping system is accompanied by a simultaneous adjustment in the livestock inventory. Supplementary activities, such as raising pigs and chickens, are abandoned and eventually the dairy herd is reduced. Carried to its ultimate conclusion the cropland and pasture is rented out and the farmer retains only enough land and feed to support a cow and a few chickens.

The immigrant farmers, who are predominantly older men, have scaled down the farm operation to the point where the older man can handle the work. In the farmer's own evaluation the present farm constitutes a retirement operation for 55 percent of the immigrant operators. Only 11 percent of the native-born operators consider their farm a retirement operation.

In view of this fact it is not surprising to observe that none of the immigrant farmers and only 8 percent of the native-born operators consider the present farm too small. The proportion who feel they have more than they can handle is 15 and 14 percent, respectively, and 85

and 78 percent consider the farm to be adequate to utilize the labor supply and provide sufficient income to satisfy the family's needs. The efficiency index for the two groups tends to support the farmer's evaluation of the adequacy of the farm to utilize the labor available. The farmer's evaluation as to the adequacy of the income is supported by the observed material and cultural possessions indices. The farmers have accumulated the items which combine to build up an acceptable standard of living for the family, including numerous luxury items and items which lighten the work load for the farmer and the farm housewife.

Though only 15 percent of the immigrant farmers consider the present farm too large, twice as many, or 30 percent, are planning to contract in the immediate future. This indicates that in addition to the farmers who already have embarked upon a progressive retirement program there are a number of farmers who visualize the necessity of embarking upon a similar program before too many years elapse. Only one of the native-born farmers is considering a retrenchment program in the immediate future.

The program of retrenchment may cover a period of 10 to 15 years. During this period the farm is gradually retired from production. Associated with this is a decline in the total valuation of the farm. This retirement procedure enables the farmer to use up that portion of the capital reserve which is represented by the livestock and equipment as well as the reduction in valuation of the land and buildings.

This plan of retirement developed as a result of interaction between the economic factors mentioned earlier and a set of values which characterize the Danish culture. The Danish farmer values independence. Twenty-five per-

cent of the immigrant operators chose farming as an occupation because it satisfied that quest for independence. The Danish farmer values freedom. He values it so much that over half of the farmers would not make any recommendation or commitments as to the occupational choices of their children.

The culture of the group does not demand that one of the children take over the operation of the farm when the parents are no longer able to handle the work. Many sons of Danish farmers have taken over the home farm. Sixty-two percent of the native-born operators are now on farms formerly operated by his or his wife's parents. But they have purchased the farm, and it is the exception when the parents continue to live on the farm after the transaction has been concluded. This adjustment occurs in only 8 percent of the households of the native-born group and in none of the immigrant group.

In this cultural setting the plan of progressive retirement on the farm developed as an alternative to retirement to the village, which is the preferred plan, when the economic situation made the latter adjustment impossible.

The Polish farmer, characteristically, does not retire from farming. He continues to live on the farm and continues to take an active part in its operation even when he is no longer able to do a day's work. In his own evaluation the farm he is now operating constitutes a retirement farm for only 10 percent of the operators. This represents a small group of the operators who have been forced to curtail their operations as a retirement technique.

The farms of the immigrant and native-born operators are not significantly different when the mean size is measured in terms of total acreage, crop acreage, number of livestock units, or labor re-

quirements. There is, however, a slight difference in the farmer's evaluation of his farm. Nearly all the immigrant operators consider the farm adequate as it is now organized and only 10 percent consider it too large. Among the native-born operators 5 percent believe they have more than they can handle, but 30 percent would like to increase the scope of their operations. However, the desired expansion can be accomplished for most through a change of status from tenant or part-owner to owner, since they consider the farm large enough in terms of labor requirement but inadequate in terms of income. The rented portion is not included in the concept "my farm" in the mores of the group.

When the evaluation of farm size is associated with the comparative ages of the operators, it is even more significant that only 10 percent consider their farm a retirement operation. Nearly all the immigrant operators are 50 years old or more and the native-born operators are nearly all less than 50 years old. The native-born operators are approaching their most productive years, whereas the immigrant operators have completed them. The latter group should be in the process of retiring.

Actually the immigrant operator is retiring. The retirement is accomplished without any apparent change in the organization of the farm. The labor involved is gradually shifted from the father to the son and eventually also the responsibility for the administration. Sons or son-in-laws of the owner are doing the work on 45 percent of the farms nominally operated by immigrant operators. The son follows the father around and learns to do the jobs that have to be done on the farm and then the next oldest learns from the oldest. Each in turn serves his period of apprenticeship on the farm and moves on to a farm of his own or a job in

the city, except one who remains on, or returns to, the farm. Finally, the legal title to the farm is transferred from the father to the son without any apparent change in the status of either.

The Polish culture prescribes that the children assume responsibility for the operation of the farm when the father no longer is able to do the work. Under the system the parents are assured of a place to live during the waning years of their life. Sixty-five percent of the native-born operators are now on farms formerly operated by his or his wife's parents. When the title to the farm is transferred from the father to the son the parents continue to live on the farm and retain a mortgage in the farm as a guarantee that the son will live up to the agreement to support the parents. Parents of the operator or his spouse are living in the homes of 24 percent of the native-born operators.

The transition from generation to generation is made without changing the size of operation. The farm is operated at maximum carrying capacity at all times and the labor supply rather than the labor requirement varies. However, since there is a full-time worker and an apprentice on the farm at all times, the efficiency of the farms of immigrant operators in utilization of labor is considerably below the efficiency of the farms operated by native-born operators. Finally, the father, even after the transfer of title, remains very much the master farmer in the family. He continues to contribute to the breakfast-table planning conference and retains for himself a few tasks around the farm.

The Emerging Family-Farm Type

Summarizing briefly, it may be stated that farmers in both the Danish and Polish ethnic groups consider farming a desirable occupation and way of living.

On the farm the families find a better balance between security and independence than they are able to find in any other occupation within the range of their experience.

The objective evidence tends to support the farmer's definition of his situation. Excepting the very youngest operators who have begun farming as independent operators in the last five years, the farm family has sufficient equity in the farm to effectively control its management and operation. The pension mortgage tends to limit the entrepreneurial function of the operator more than the commercial mortgage. Historically, this method of transferring the farm is characteristic of the Polish group. It continues to be more prevalent in the Polish group but few recent transfers of this type have been made in either group.

The tendency in each group is to attain the mortgage-free owner-operator status as early as possible. However, farmers of the Danish ethnic group will improve the farm home, mechanize their operations and put their children through school, even if this means extending the time of the mortgage. The farmers of the Polish ethnic group adhere more strictly to a cash-and-carry philosophy and will pay off the mortgage first even if this means sacrificing personal conveniences.

The labor required to operate the farm is supplied almost entirely by the family in both groups. The labor contribution of the children to the farm operation is limited, in the Danish ethnic group, to after school and summertime work. Characteristically, sons and daughters alike, leave home shortly after completing high school. Some go on to advanced education in college or business and trade schools. Some seek employment on farms or in non-farm occupations. Only a very limited number remain at home to help with or take over

the operation of the home farm. In contrast, sons of Polish operators, as soon as they are old enough to work and frequently before reaching the minimum compulsory school attendance age, assume responsibility for increasing shares of the work and administration of the home farm. Sons rarely leave home unless there is another son old enough to replace him on the farm.

Part-time farms, which account for nearly 20 percent of all farms, serve different functions in the two ethnic groups. In the Danish group the part-time farm is a retirement operation and the operator does not have off-the-farm employment. For most Danish operators it is the last step in the retirement program. A few find it necessary to give up farming entirely as the final step. In the Polish group the part-time farm serves as a rural residence and as a source of supplementary income to the operator who is employed in a seasonal or full-time non-farm occupation. Frequently, this is the first step toward the ultimate goal of mortgage-free owner-operator status.

The remaining 80 percent of the farms serve the function of family farms. They are the sole source of income for the farm family and provide nearly full-time employment for the available labor. Except on the very large farms of 180 acres or more, the family head and farm-operator in the Danish group does the work alone with only incidental assistance from teen-aged sons. Income from the farm is sufficient to put the children, almost without exception, through high school and to aid a high proportion to continue beyond high school in trade and business schools or college. In the Polish group, on the other hand, the operator characteristically has the assistance of one or more sons. Only the very young operators, whose sons are not yet old enough to help, do the work alone. The sons leave

school and work full-time on the farm as soon as they pass the compulsory school attendance age limit. A few complete high school and some go on for advanced work in college or trade school, but this is usually not until the next younger son is able to take over the farm work.

Finally, the Danish and Polish ethnic groups differ sharply in the procedure by which the farm operator retires from farming. The Danish operator characteristically follows a plan of progressive reduction of the labor requirement on the farm. The reduction is accomplished through changes in the livestock and crop organization and may eventually involve a reduction in the total acreage in the farm. The plan does not include provisions for passing the farm on from father to son, though a son frequently purchases the farm when the father moves to a smaller farm. The Polish operators maintain the farm at maximum productive capacity. The mores of the group prescribe that the sons assume responsibility for the work when the father is no longer able to handle it alone and eventually the farm-operating son acquires legal ownership of the farm. The parents continue to live on the farm and frequently share the house.

In recent years the sons, finding themselves in a better bargaining position, agree to take over the farm only under specified conditions. In the early transition period the son may operate the farm under a fixed rental or wage agreement rather than as an "unpaid" family worker. During this period the father is frequently asked to mechanize the operations or make other improvements as an added attraction to keep one of the boys on the farm. Finally, the son may buy

the farm at the prevailing market price, less his share of the inheritance, rather than operate under a pension mortgage. In each case the adjustment tends to vest greater control of the entrepreneurial function in the operator of the farm and further indicates that the father-son succession, as prescribed in the mores, is breaking down.

The evidence uncovered in this study warrants the conclusion that the emerging pattern of adjustment on the medium-sized dairy farm, which is the prevailing farm type in the Great Lakes Cut-over Area, is toward a one-man commercial operation. Independence and security are still dominant values ascribed to farming as an occupation, but they are evaluated in terms of the operator and his immediate family rather than in terms of the great family. The young man who chooses farming as an occupation does so because farming will satisfy his demands for security and independence better than, or as well as, any other occupation for which he is qualified. Maintaining the farm in the family is not a dominant value in the Danish group and it is being displaced more and more in the Polish group. Father-son partnerships, never important in the Danish group, are decreasing in both groups.

The family farm in this physical and cultural setting is a one-man operation on which the entrepreneurial function is vested in the farm operator and which is flexible enough in terms of labor requirements to absorb the labor contribution of teen-age children thereby also increasing the farm income during the period when the drain on the family resources is greatest. (See following table.)

SUMMARY TABLE—PERFORMANCE OF DANISH AND POLISH FARM OPERATORS IN WISCONSIN WITH RESPECT TO SELECTED FAMILY FARM TRAITS

| Characteristic | | Total | Danish | | | Polish | | |
|---|---------|-------|--------|------------|--------|--------|------------|--------|
| | | | Total | Generation | | Total | Generation | |
| | | | | First | Second | | First | Second |
| Total farm operators..... | number | 118 | 59 | 20 | 39 | 59 | 20 | 39 |
| Entrepreneurship: | | | | | | | | |
| Owner operators..... | percent | 95 | 95 | 95 | 95 | 95 | 100 | 92 |
| Mortgage-free owner operators..... | percent | 60 | 54 | 60 | 41 | 66 | 95 | 51 |
| Labor supply: | | | | | | | | |
| Mean age of operators..... | years | 51 | 54 | 62 | 49 | 48 | 64 | 40 |
| Operators 50 years and older..... | percent | 49 | 61 | 90 | 46 | 37 | 95 | 5 |
| Operators farming with no help..... | percent | 56 | 64 | 70 | 62 | 48 | 15 | 64 |
| Operators with one or more sons helping on home farm..... | percent | 40 | 31 | 25 | 33 | 49 | 75 | 36 |
| Mean "Man-Equivalent Units" on farm ¹ | number | 1.4 | 1.2 | 1.0 | 1.4 | 1.6 | 1.8 | 1.5 |
| Labor Requirements: | | | | | | | | |
| Mean size of farm..... | acres | 100 | 96 | 98 | 96 | 103 | 99 | 108 |
| Mean cropland per farm..... | acres | 44 | 42 | 39 | 47 | 45 | 42 | 48 |
| Mean animal units per farm ² | number | 30 | 27 | 24 | 28 | 32 | 32 | 32 |
| Mean "PMWU" per farm ³ | number | 341 | 300 | 280 | 310 | 382 | 382 | 382 |
| Labor Efficiency: | | | | | | | | |
| Efficiency index ⁴ | ratio | 241 | 242 | 277 | 227 | 240 | 209 | 262 |
| Succession and Retirement: | | | | | | | | |
| Operators farming the home farm ⁵ | percent | 41 | 40 | .... | 62 | 42 | .... | 65 |
| "Great Family" ⁶ households ⁶ | percent | 13 | 5 | .... | 8 | 20 | 15 | 24 |
| Operators wanting sons to farm the home farm..... | percent | 28 | 18 | 8 | 23 | 39 | 73 | 20 |
| Farms on which sons or sons-in-law of owner are doing the work..... | percent | 14 | 9 | 5 | 11 | 19 | 45 | .... |
| Retirement farms ⁷ | percent | 18 | 25 | 55 | 11 | 10 | 20 | 5 |

¹ Computed from standard units derived by Erwen J. Long, *Labor Foundations of Wisconsin Family Farms*, Ph.D. Thesis (unpublished), University of Wisconsin, 1948.

² Computed from standard units published in *What's New in Farm Science*, Annual Report, Bulletin No. 474, University of Wisconsin, January 1948.

³ Computed from standard labor requirements of Wisconsin crops and livestock prepared by P. E. McNall, Department of Agricultural Economics, University of Wisconsin, 1947 (unpublished).

⁴ The efficiency index is the ratio of the mean PMWU to the mean MEU for the respective groups.

⁵ "Operators farming the home farm" include only those owner-operators who represent the second- or third-generation of the family on that particular farm. If the farm has been expanded but includes the original homestead it is still considered the home farm.

⁶ The "great family" households as used here is limited to those families in which the parent(s) or parent(s)-in-law of the operator are living in the same house as the operator.

⁷ Retirement farms are defined here to include only those farms on which the operator has curtailed his operations and considers the farm a retirement operation.

Changing Land Tenure Patterns in Mexico

By W. JAMES FOREMAN*

I. Land Tenure Under the Aztecs¹

WHEN the Spaniards invaded "New Spain" various groups of inhabitants in different stages of civilization occupied parts of what is now Mexico. Occupying the greater part of the northern plateau were nomadic tribes which extended the sphere of their influence into the eastern mountain range and into some of the coastal region. In the Yucatan Peninsula the Mayan tribe had developed a fairly advanced culture and had subjected a number of other tribes in the area to their influence. Mayan culture was based primarily on agriculture, and there had been worked out a fairly definite system of land tenure in which the rights of possession were clearly established. The Aztecs, however, who had established themselves in the central plateau, influenced the ensuing patterns of land tenure most.

The population of the productive area of the country was composed of tribes made up of smaller kinship groups of clans which came to be known to the Mexicans as *calpulli*. The use of the term in early writings is somewhat ambiguous, but it appears that in time it came to apply to the place units upon which the *calpulli* established themselves in the form of more or less sedentary agricultural communities. These *calpulli* made up the oldest and most important form of land tenure under the Aztecs. The lands which the *calpulli* or communal farms held were of several kinds. Surrounding each

village were the "town lands" or *altepetlalli* corresponding very closely to the *ejidos* of the villages recognized under the recent agrarian reform movement and also resembling the Spanish communal farm existing in parts of Castile at that time and later transplanted to Mexico. Included in this area were all of the lands held by the several kinship groups which might make up the village.

Probably most of the land was held not for cultivation but rather for hunting, timber, and rock quarries; however, this area, as well as the cultivated area, was carefully divided so that each clan or kinship group had its own hunting grounds. There were no pastures because domestic cattle were not a part of the agricultural economy of the period.

The areas occupied by the individual *calpulli* were made up in part of the tillable plots, *tlatmilli*, distributed among the family heads of the group. These individual plots were called *heredades* (inheritances) by the Spaniards because they passed from father to son without formal inheritance proceedings. Only plots left vacant for one reason or another were available for distribution to new heads of families which might not have acquired land through inheritance. The size of the individual *tlatmilli* varied with the amount of land available, the number of persons who had to be supplied, the productivity of the soil, rainfall, and the supply of irrigation water. It is believed that the average holdings amounted to about two or three hectares.² Boundaries of the individual plots were marked by stone walls, rows of trees, narrow lanes, or ditches which also

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¹ For perhaps the best treatment of Mexican tenure systems of this period *vide*, George McCutcheon McBride, *The Land Systems of Mexico* (New York: American Geographical Society, 1923).

² One hectare is equal to 2.47 acres.

served for drainage or irrigation. Heavy penalties, sometimes even death, were imposed for the removal of landmarks.

Besides the individually farmed plots the *calpulli* had a "commons" set aside for such uses as production of supplies for the maintenance of the local chief, entertainment of official visitors, payment of tribute to ruling chieftains, prosecution of wars, and the support of religious institutions. These lands were held by the the community group and worked by all the people in common. Land set aside for the support of the kings usually consisted of a plot of 163 acres of the best lands and sometimes of an area twice this size. Another plot, of only slightly less importance, was cultivated by the plebeian "people of the palace" who were exempt from all except nominal tribute to the kings.

Neither the individual plots nor the common public plots of the *calpulli* could be sold by the user. Not even the chiefs or the emperor might take them away from the village. Renting of unused lands was permitted, however, either to members of the same kinship group or to others. In return for the use of the land the renter paid a share of the crops, and the proceeds from their sale went into the public treasury.

Apparently the administration of the *calpulli* was completely democratic; but, before the advent of the Spanish conquest there was beginning to replace the communal farm a system of lands given in usufruct to the nobles as compensation for their services to the government. This resulted in the growth of a feudal system much like that of Europe. During this period the user of the land was forbidden to sell it without the permission of the

king, and he might never sell it to plebeians.

A third type of tenure under the Aztecs was found in the lands set aside by the king in the form of entailed estates for himself or members of his family. Occasionally lesser public officials also received estates as did some others who maintained armies in time of war. Each of the laborers on these estates received a piece of land for cultivation and a place upon which he might build a hut. In return he worked on the farm or in the household of the landlord. These peasants were not allowed to leave the land which had been granted to their masters nor were the grantees of the land permitted to remove them. In return for the services which the workers provided their *patron*, he assumed the responsibility for their protection and welfare.

II. Land Tenure Under the Conquistadors³

By virtue of the bull of Pope Alexander VI, issued in 1493, Spanish monarchs were granted claims to all land which might be discovered west of the imaginary Line of Demarcation in the Atlantic Ocean. After the conquest of Mexico ultimate title to all land was reserved by the Spanish Crown, and the original settlers enjoyed only usufruct with rights of inheritance.

As a means of rewarding the explorers and settlers the crown made large grants of land, including the right to exploit the Indian population, to those who participated in the colonization movement.⁴ These grants were known first as *repartimientos* (lands of allotment) and later as *encomiendas*, signifying that the Indians were entrusted to the Spaniards'

³ A more extensive description of land systems described here may be found in Eyer N. Simpson, *The Ejido: Mexico's Way out* (Raleigh: The University of North Carolina Press, 1937), and in Nathan L. Whetton, *Rural Mexico* (Chicago: The University of Chicago Press, 1948).

⁴ While the system of *repartimientos* as introduced earlier in the West Indies called for the granting of one or more Indian chiefs (*caciques*) and his followers, in Mexico the more sedentary indigenous population encouraged the use of the place unit rather than the kinship group as the basis for making grants.

care. The *encomienda* was a device for accomplishing the threefold purpose of Christianizing the Indians, bringing them into subjection to the crown, and rewarding the conquistadors for their exploits.

The largest single grant made under the *encomienda* system was that given to Cortes. He received a total of 25,000 square miles of land (not all contiguous) in which were 22 towns and 115,000 Indians. When his property was formed into a *mayorazgo* (an entailed estate) in 1535, there were 150,000 people bound to the property which was to pass to his heir and remain in the family undivided. The establishment of a *mayorazgo* was dependent upon the granting of a title of nobility to a landowner by the crown, but the conquistador having acquired land sought also a title and welded his property into a perpetual estate to be passed on to his children intact. This custom of forming *mayorazgo* prevailed until the era of independence and was largely responsible for the preservation of large estates.

The system of payment of tribute to the village chief and the emperor under the Aztecs made the land tenure system existing at the time of the arrival of the conquistadors particularly well suited to the Spanish *encomienda* System. The Spanish overlord was merely substituted for the former Indian chief, and tribute was collected in much the same way as in earlier centuries.

Rights to the use of the *encomienda* could originally be revoked at the pleasure of the king and in any event were intended to revert to the crown on the death of the colonist; but in 1536 the period of possession was extended through the second generation. At the end of that period title was to revert to the crown and the land made available for grants to other persons. In 1542 laws

were passed in Spain providing for the complete abolition of the *encomienda* system, but they were repealed without having been enforced. Royal decrees of 1559, 1607, and 1629 extended the right of possession of the *encomiendas* to the third, fourth, and fifth generations respectively; and the *encomienda* came to be regarded as private property.

Not all of the men who were in line to receive royal favors for their participation in the conquest were rewarded on the grand scale of the recipients of *encomiendas*. Soldiers, for example, were usually given smaller grants called *peonias* or *caballerias*. *Peonias* consisted of about 100 acres of land while the *caballerias* were tracts of about 500 acres or sometimes twice that size. Both of these were grants of land only and did not include the right to the forced services of Indians. Improvement of the holding and four years' occupation of the land were acquired before full title was granted. These grants often formed nuclei for the accumulation of larger holdings.

Much of the land area not given to *encomenderos* (owners of *encomiendas*) was organized into tribute districts administered directly by representatives of the crown. In 1572 there were reported to be 507 *encomiendas* while the crown held 320 other tribute districts. In these tribute districts the Spanish government recognized the collectively-owned village farm which had prevailed under the Aztecs, modified it somewhat in conformity to the Castilian pattern, and gave it legal status through appropriate legislation.

Each land-holding village had an area of land known as the *fundo legal* sufficient for setting up its houses. There was assigned to each family head a parcel of land for his use with the exclusion of all others. These parcels were called *tierras*

de repartimiento. Each town had also a *propio* the products from which were used to pay public expenses. Finally, there was assigned to each village of Indians an *edjido* with an extension of one league for the exploitation of all the people in common.

The Catholic Church had received grants of land "in trust" under the same conditions as individuals, and Cortes and other conquistadors made grants or endowments from their own grants to hospitals and other ecclesiastical corporations. These religious corporations prospered, and the size of their land and other real estate holdings increased phenomenally. In 1677, because of the unpopularity of the Jesuits and in order to modify the system of large land holdings, the Spanish Crown confiscated all Jesuit property. However, this represented only a small part of the property of religious bodies. In 1821 it was estimated that the Catholic Church owned 50 percent of the property and capital in Mexico and that it controlled much more through mortgages and other encumbrances.

Under the Aztecs, possession and occupation of the land had passed from generation to generation without formal evidence of title; and, in later years when the Spanish began to intermarry with the Indians and to share their village life, much of the land passed into the hands of the Spanish in the same way. When the government finally made legal provisions for establishing title it was usually the Spanish and not the Indians (because of their ignorance of the Spanish language and legal practices) who became the legal owners of most of the land. Before the war for independence (1821) the 10,000 Spaniards in New Spain completely dominated the whole of the area.

The colonial system of land administration did not result in the fullest use of the

land and labor resources available at that time. Three major causes of the low production of agricultural products were: (1) often only a fraction of the enormous feudal estates was under cultivation; (2) a large part of the country's wealth was concentrated in the hands of the clergy and religious corporations; and (3) world traffic and trade were unduly limited.

III. Independence to the Revolution

Characteristic of the land tenure system following the war for independence of Mexico is the *hacienda* or large farm organized in many respects like the old southern plantations in the United States. *Haciendas* contained at least 1,000 hectares of land and employed from 100 to 2,000 people. They were named, were shown on maps, and came to be important units of public administration. Often they were incorporated as *municipios*. Generally the population was large enough that the *hacienda* tried to be completely self-sufficient, making whatever cloth, pottery, etc. which were needed and using the grain and fruits produced on the farm for home consumption.

The *peon* who furnished the labor for the *hacienda* seldom received money wages. Instead he received the right to the use of a hut and to farm his *milpa* or small plot of ground. Perhaps, on some festive occasion, he was advanced a few pesos in cash for which an entry was made in the book at the *tienda de raya* (company store) where he was forced to make all his purchases. The common practice was to lead the *peon* to believe at the end of the year that he had not quite completely paid off his account with the labor which he had contributed, and he remained in a state of perpetual indebtedness. Laws permitted the *hacendado* (the owner of the *hacienda*) to pass the debts of the father on to his sons so that the chains of bondage were indis-

solubly forged even before birth. Many of the *peons* were happy and contented because they neither understood nor longed for a different sort of life, but others came to be dissatisfied.

The *hacendado* was something of a professional landowner, generally an absentee landlord; and his interest in farm property was due less to its economic possibilities than to its character as an ancestral estate. With an absentee owner, a hired administrator, and poorly-paid *peons*, the typical Mexican *hacienda* yielded little more than enough to feed its numerous population.

There had been some concern throughout the period of the history of Mexico's independence about the accumulation of property in the hands of a few owners. As early as 1823 an act was passed permitting the breaking up of large estates, but no attempt was made to enforce it. The independent Mexican government also began quite early to try to prevent the monopoly stronghold of the church on land and property. In 1823 the Inquisition properties were confiscated and between 1833 and 1860 the church disposed of much of its property holdings because of the threat of confiscation. Even after the Reform Laws of 1856, expropriating all church property, were passed, they were not strictly enforced; and the church retained large land holdings. About three-fourths of the church-owned lands lay idle. A part of the drain on the nation's economic strength from the fact that the church lands were idle and free of tax payments was counteracted by the fact that practically all hospitals and educational and charitable institutions of the period were supported by the the church.

The Reform Laws of 1856 were enacted with the intention of creating a country of private property. While they aimed specifically to curtail the power of

the church corporations, there were many occasions when the same laws were applied to the communal villages. One law, known as the law of expropriation, provided for the breaking up and sale of all real estate owned by civil and religious corporations not used directly for civil or religious purposes. The law also stipulated that the land should be sold to the former tenants or lessees at prices to be fixed by the government. In the case of the church the law was rendered somewhat more effective by the fact that other reform laws had restricted the powers of the church courts to the trial of cases affecting only the clergy whereas previously they had also tried civil cases. The Constitution of 1857 also contained provisions prohibiting civil and religious corporations from owning and administering any real property except buildings devoted exclusively to purposes for which these bodies existed, but the laws were not always rigidly enforced.

Not too much progress in carrying out the provisions of the land reform of 1856 and 1857 had been made when General Porfirio Diaz gained control of the government in 1876. During the period of his domination of the political scene, which extended from 1876 until 1910, he carried out a policy of encouraging investment of capital, both native and foreign, in the industry and agriculture of Mexico. During Diaz' regime an estimated 134 million acres of public land passed into the hands of a few individuals with a return to the government of only about \$12 million.

In 1883 the Mexican Government contracted with a number of engineering firms to survey public lands for purposes of colonization. In payment for their services the surveyors were granted one-third of the land surveyed plus the option of buying the other two-thirds at low prices. In this way much of the public

domain was alienated, and it frequently went into the hands of owners with very little interest in developing more than a small fraction of the land which they received. By 1910, the end of Diaz' regime, it was estimated that Mexico, with a population of 15 million people, had only about 30 million acres of land under cultivation—two acres per person. An additional 120 million acres were devoted to pasture uses.

During Diaz' time the landholding villages fared very badly. Some of the methods by which the villages were deprived of their lands were: (1) interpretation of the Constitution of 1857 to mean that civil corporations such as villages could not own land collectively; (2) encroachments of colonization companies; (3) losses through denunciation of property for which there was no legal title;⁵ (4) alienation through manipulation of of water rights; (5) punishment of whole villages for rebellion against the government; and (6) absorption of the village property by creditors.

It was this state of affairs, in which more than 90 percent of the heads of rural families were completely landless, which furnished such fertile soil for the growth of a revolutionary movement waving the banners "*tierra y libertad*" (land and liberty) and "*tierra y libros*" (land and books).

IV. Provisions of the Agrarian Reform⁶

(A) *Creation of Ejidos.* The outcome of the Revolution of 1910 was that the state declared its right of eminent domain over the land and water within the limits of the national territory and its

⁵ Legislation passed during the period intending to clarify the title to as much of the nation's real estate as possible permitted any person knowing of property for which there existed no legal title to file claim with the government for the acquisition of title. Frequently the people occupying the land were ignorant of the law and made no attempt to acquire titles; so others, eager to acquire land, denounced the property and were themselves awarded the ownership rights.

right to expropriate them in the social interest through indemnification of the owner. Provision was made for the re-establishment of the rural land-owning villages, the explicit protection of the existing small land holdings, and the creation and development in greater numbers of small properties by means of compulsory breaking up of the large feudal land holdings (*latifundia*) at the same time destroying the large landholdings. There was ordered the fixing of a maximum size of agrarian property; and corporations, banks, and religious bodies were prohibited the acquisition of rural property.

Imitation of the family farm policy of the United States and Western Europe was advocated by many; but most of the rural population had had no experience with private property, and they had so little capital and were so poorly educated that it would have been futile to expect such a program to succeed.

The restitution of *ejidos*, or community-owned farms, from expropriated lands was proposed by Luis Cabrera of the *Camara de Diputados* in 1912. After the passage of a series of enabling acts the *ejido* emerged as the major objective of the agrarian reform. The new program took advantage of the heritage of village organization associated with pre-Colonial culture.

The original legislation called for land to be expropriated to provide each family or single person over eighteen years of age in the village with 3 to 5 hectares of irrigated or humid land, 4 to 6 hectares of seasonal land receiving regular rainfall or 6 to 8 hectares of land receiving only irregular rainfall. It was soon learned, however, that these acreages frequently were not adequate for providing even a

⁶ For material in this section the author has used articles in *Agriculture in the Americas* and *Foreign Agriculture* and numerous Spanish language publications.

subsistence level of living for the families; and the size of the individual grants has increased from time to time. In 1947 the size of plots granted to *ejidatarios* (individual heads of families receiving *ejido* lands) was increased to at least 10 hectares of irrigated or humid land or 20 hectares of land dependent upon seasonal rainfall.

Land grants to *ejidos* may include crop land, pasture and woodlands, land for the village site, and a school plot for the use of the rural school. In case there is not enough crop land to accommodate the number of qualified recipients, a selection is to be made giving preference to individuals in the following order: (1) peasants over thirty-five years of age with a family to support; (2) peasant women with a family to support; (3) peasants thirty-five years of age or younger with a family to support; (4) peasants over fifty years of age without a family to support; and (5) other peasants whose names appear in the village census.

Originally only those villages having a certain political status—towns, settlements, congregations, etc.—were given the right to petition for lands. Since the political status enjoyed by a village was purely an accident of history, administrators of the grants have sometimes been willing to permit changes in the designation of political status. Some changes in the types of villages eligible to receive land have also been incorporated into more recent legislation. The petitioning village, in order to be recognized, must also have at least 20 heads of families who were Mexican by birth, 16 years of age (if not married), residents of the village for six months or more, and accustomed to making their living from agriculture.

Under the *ejido* laws there are four methods by which a village may receive lands: (1) by restoration of lands which it could be proved were previously owned

and unjustly or illegally alienated; (2) by outright gift of lands where it could be shown that the village had no land or insufficient land for the needs of its inhabitants; (3) by legalization of the right to have and to hold lands already in the possession of the village; and (4) by enlargement where the original grant had proved insufficient for the needs of the inhabitants.

(B) *Expropriation of Land.* Up to 1933 about one-eighth of all the land granted to *ejidos* had come from public lands, but the rest (and since that time, practically all) of the land needed for such grants has been expropriated from the private owner. In designating land subject to expropriation, the law stipulated that it should be within seven kilometers of the village and should be outside the classification of a "small property." Confusion has resulted from various definitions of this term ranging from 50 hectares up to 200 or more.

The Agrarian Code was amended in 1937 so as to exempt from expropriation during a period of 25 years lands ranging in maximum area from 300 hectares of the most productive land to 50,000 hectares of desert land provided the owner maintained a minimum number of specified classes of livestock. Upon request the owner of such property was issued a "certificate of inaffectability." At the same time up to 300 hectares of plantations of *plantanos* (bananas), coffee, cacao, fruit trees, and henequen were declared inaffectable; but sugar cane, alfalfa, vanilla, grapes, and rubber plantations which had previously been inaffectable were excluded.

The Agrarian Code of 1940 declared inaffectable areas of less than 100 hectares of irrigated land or 200 hectares of seasonal land; up to 150 hectares of cotton if irrigated; up to 300 hectares of land planted to *platanos*, coffee, cacao, or fruit

trees; up to 150 hectares of henequen; and areas subjected to a process of reforestation. The earlier provision for "certificates of inaffectability" for livestock ranches was also written into this code. In addition, buildings, if not abandoned, and irrigation works not affecting *ejido* land were declared inaffectable.

Frequent changes of policy reflect the diversity of views of the Mexican people as to the most desirable means of dealing with problems of land tenure. Some people want only *ejidos* in Mexico. Others think the *ejidatario* should be given the right to sell his land, thereby putting it back into private ownership. A third group would guarantee the rights of the remaining small private property holders and of existing *ejidatarios* and suggest colonization of uninhabited coastal areas and new irrigation districts rather than the expropriation of more private property to accommodate more of the landless *peons*. Under this plan *peons* who still could not be accommodated would have to look to industry for employment. This latter view is apparently the one held by the current administration in the government.

(C) *Other Forms of Tenure.* The granting of *ejidos* to villages was not the only aspect of the agrarian reform. The principal subsidiary procedures for the redistribution of land are those covered by the following laws with their subsequent modifications:

1. The Idle Lands Law of 1920 permitted municipal authorities to turn over to anyone willing to cultivate it privately-owned crop land not planted by a certain time of the year. Individuals receiving the land were required to pay rent up to 10 percent of the harvest to the owner. Use of idle land was limited to a period of one year after which it had to be returned to its owner. This law has not been frequently invoked in recent years.

2. "Agrarian Laws" enacted by the several states were authorized by the Constitution of 1917. The states were to establish a classification of lands according to the nature of the soil and rainfall as the basis for determining the maximum area which a single owner might hold. The excess of the area thus fixed was to be subdivided by the owner within the period set by law and these subdivisions offered for sale under conditions approved by the government. About 15 states set no limit at all on the amount one person might own, and the other states enforced these laws in only a very few cases.

3. The Law of New Centers of Agricultural Population of 1932 was intended to care for residents of villages which had insufficient land subject to expropriation within the stipulated radius of 7 kilometers. This law should be classed with others relating to colonization. It empowered the government to establish new centers upon its own initiative or upon the petition of fifty or more rural laborers possessing no land, or insufficient land. Each colonist was to acquire title by subsidized purchase to the land which he could cultivate personally with the aid of his family (3 to 25 hectares). Colonists were forbidden the cultivation of their land by hired labor or renting.

4. The so-called "Homestead Law" of 1923 was roughly comparable to homestead legislation in the United States. It provided that any Mexican over eighteen years of age could obtain title to national lands in an amount varying from 25 hectares of irrigable land to 200 hectares of non-irrigable, pasture, or mountain land, by occupying and tilling it for a period of two years. Title was granted to the individual settler upon the payment of fifty pesos and the presentation of proof of occupancy. The only restriction put upon the holder after he had received title to the land was that he could not sell or transfer it to anyone already possessing property equal to or greater in area than that permitted to any single person under the law itself. While 1.5 million hectares of land were taken up by 9,159 "homesteaders" in the first ten years the law was in force, this law has not been operative on a very large scale in more recent years.

5. Colonization programs have been common in Mexico from the time of the earliest European settlers, and the present reform has continued to encourage such ventures under

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the Law of Colonization of 1926. Some of the most successful colonies established in later years were those founded by religious groups and by a group of Russian immigrants. Many of the other attempts of settlers to establish themselves on the land have been unsuccessful; however, between 1916 and 1943 the government established 177 colonies with 13,746 colonists.

Typical of the attempt to relocate and redistribute the population of the country through the colonization movement are the two groups of 159 families from the central region where the population is dense. They were moved by the government in 1947 to new irrigation districts which had just been opened for settlement. The government paid travel expenses and gave to each family head some cash for current living expenses until he had become established on the land. In both of these projects each family was allotted 10 hectares of land for which the government was to be repaid in time. These settlements were established not as *ejidos* but as colonies, and each of the colonists eventually becomes a private owner with all of the rights attendant upon such a form of land tenure.

Private lands may be expropriated for colonization purposes with the exception of properties which are being adequately farmed, properties which constitute an agricultural-industrial unit planned and carried out in accordance with modern technology, or properties in which direct administration is employed in more than 50 percent of the lands used for each type of enterprise. In the selection of colonists for any given project, preference is given in the order of listing to sharecroppers and renters who are working the land at the time the project is initiated, farmers living in the vicinity, expatriated farmers who wish to return to the country, farmers in general, and non-farmers.

¹ Simpson, *op. cit.*, and Whetton, *op. cit.*, are excellent references on this subject.

V. The *Ejido* in Operation¹

The return to the old system of communal farming has been welcomed by a large proportion of the Indian farmers, and by the end of 1946 the program of land redistribution had placed about 31 million hectares of land in the hands of 1,753,645 beneficiaries. These grants involved one-fourth of all the agricultural land and one-half of the crop land in Mexico. One-fourth of the nation's population and two-fifths of the persons engaged in agriculture now live on *ejidos*. There were still (in 1948) 455,251 persons whom the Agrarian Department had declared to have a right to land under the laws and to whom no land had yet been given. Others were clamoring for the right but had not yet been officially recognized. Furthermore, complaints that the individual plots already granted were too small to provide a rural family with a decent livelihood were becoming louder. It is clear that the *ejido* program in Mexico has been a major undertaking.

The organization of the *ejido* which takes care of the problems of operation consists of (1) the *comisariado ejidal* (executive committee) of three members, (2) the vigilance committee of three members, and (3) the general assembly composed of all *ejidatarios*. Committees are elected for 3-year terms, and members may be removed from office by a vote of the general assembly. In order to be eligible for committee membership the *ejidatario* must have six months of residence in the village, be in good standing in the *edijo* community, and be literate. *Ejidors* receive some supervision and control from at least three federal agencies: (1) the Ministry of Agriculture, (2) the Agrarian Department, and (3) the National *Ejido* Bank.

Pastures and woodlands belong to the *ejido* collectively unless they are opened

for cultivation and are divided among the *ejidatarios* in the form of plots. The right to utilize water for irrigation of the *ejido* lands also belongs to the *ejido*. All *ejidatarios* are entitled to a house lot in the town site but must occupy and build on it. They may acquire full individual ownership rights after four years of continuous possession. Excess house lots may be rented, leased, or sold under certain conditions to people desiring to settle in the village.

The tillable lands may be farmed collectively or individually. If collective farming is practiced, the ownership of the land rests with the *ejido*; and the individual is issued a certificate of agrarian rights which entitles him to share in the enterprise of the collective. If individual farming is agreed upon, the tillable land is divided into plots with each *ejidatario* allotted one and given limited ownership over it. The right of the *ejidatario* to participate in the collective enterprise when collective farming is practiced or to use the plot individually when the individual form of tenure is used cannot be alienated or transferred to another. The land cannot be leased or mortgaged, but ownership rights may be bequeathed to one's heirs.

Ejidatarios may be deprived of their rights for these reasons: for mortgaging, transferring, or renting the property to others; for failing to till the plot for two years in succession or for not working in the collective enterprise for a period of two consecutive years; in the case of marriage by a female *ejidataria* to a male who already holds a plot; for mental derangement, alcoholic degeneration, or justified imprisonment for more than two years; for failure to take possession of the awarded plot or to participate in the collective enterprise within three months after the grant is made; for failure to pay taxes or to meet such obligations as

might be contracted in a general assembly; whenever the rights of the *ejidatario* have been suspended on two occasions for justified reasons; or when the *ejidatario* commits acts against the community which cause disorganization, confusion, or lack of harmony.

While about 95 percent of all the *ejidos* in Mexico have individually farmed parcels of land, the remaining 5 percent are farmed collectively. The collective *ejidos* are concentrated for the most part in a few highly commercialized farming areas.

While many of the features of the individually operated *ejido* date from pre-conquest days, the collective *ejido* of Mexico, where the land is operated and used in common, is of more recent origin. The land is owned and worked jointly by the members of the *ejido* instead of being divided into plots and assigned to individuals. Capital also is under the control of the *ejido*. Members place themselves at the disposal of the *ejido* to be used in the production process according to their respective abilities under the direction of the executive committee and the various work foremen. Products of the enterprise belong to the society and are marketed by it. Profits are distributed to members in the form of money income or social benefits or both.

Three major problems of the collective *ejido* not found in the individual *ejido* are distribution of work among members, compensation of members for the various tasks performed, and distribution of profits from the joint enterprise. Lack of trained leadership and of discipline on the part of the individual *ejidatario* are also problematic.

Some advantages of the collective *ejido* are that it lends itself to the more economical use of farm machinery, makes possible the use of vocational specialties of the workers, makes rotation and

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specialization of crops more feasible, encourages supplementary enterprises providing employment during slack seasons, results in more uniform quality of products and greater bargaining power in the market, and tends to preserve the economic unity of the previously existing *hacienda*.

VI. Progress or Retrogression in Land Reform?

What of the success of the agrarian reform in its objectives of distributing the ownership of the land as widely as possible and in increasing the output of agricultural commodities?

There were still, in 1940, 301 holdings of more than 40,000 hectares and 1,472 holdings larger than 10,000 hectares. (See Table 1.) Most of these very large

TABLE 1—LANDHOLDINGS IN MEXICO, CLASSIFIED ACCORDING TO SIZE OF HOLDING, 1940

| Size of holding (hectares) | Total landholdings | |
|-------------------------------|--------------------|---------|
| | Number | Percent |
| Private Holdings Under 1..... | 497,372 | 17.6 |
| 1 - 5..... | 431,221 | 15.3 |
| 5.1- 10..... | 74,187 | 2.6 |
| 10.1- 25..... | 82,013 | 2.9 |
| 25.1- 50..... | 46,466 | 1.7 |
| 50.1- 100..... | 31,763 | 1.1 |
| 100.1- 200..... | 22,695 | 0.8 |
| 200.1- 500..... | 17,428 | 0.6 |
| 500.1- 1,000..... | 6,087 | 0.2 |
| 1,000.1- 5,000..... | 6,883 | 0.2 |
| 5,000.1-10,000..... | 1,342 | 0.1 |
| 10,000.1-20,000..... | 751 | 0.02 |
| 20,000.1-40,000..... | 420 | 0.01 |
| Over 40,000..... | 301 | 0.01 |
| Total private holdings..... | 1,218,929 | 43.2 |
| <i>Ejidatarios</i> | 1,601,392 | 56.8 |
| Total Landholdings..... | 2,820,321 | 100.0 |

Source: Dirección General de Estadística.

holdings were in areas where the land is relatively unproductive, but it appears that more progress could be made. Nevertheless, the fact that approximately three-fourths of the estimated 3.8 million persons gainfully employed in agriculture own some land (making the

somewhat unrealistic assumption that all of the nation's 2.8 million landowners are gainfully employed in agriculture) must be recognized as a real achievement for a country which so recently had more than 90 percent of its rural population landless.

Continuation of the program of land distribution will depend upon the number of pending claims for land by legally qualified *peons* and the availability of land for making grants. While there are an estimated 955,000 *peons* eligible to receive land, probably not more than 1,000 hectares of cropland is subject to expropriation under present laws. The problem is further complicated by the fact that 72 percent of the landless *peons* are in the central plateau, while only 19 percent of the land subject to expropriation in 1940 was in that region.

The accommodation of landless *peons* in vacant lots of other *ejidos* offers some limited possibilities, but only the creation of new centers of population promises to provide land for any significant number of those still landless. Some 500,000 hectares of new land from irrigation projects may be available for settling during the current presidential administration accommodating 50,000 settlers with 10 hectares each (the present legal size of the *ejido* plot), but this offers only a small ray of hope in view of the number of persons still to be accommodated.

Two of the chief aims of the revolutionary government in the redistribution of land have been to improve the economic and social conditions of the rural populations and to increase the total national production of agricultural products. Disregarding the inadequacy of statistical data, production of foodstuffs appeared to decline from 1910 to 1920, although since that time the trend has been slowly but steadily upward. Because of the increase in population, the per capita production gains are probably practically

nil. Some commodities such as corn, barley, beans, green chile, and vanilla are being produced in smaller quantities in recent years than in pre-reform times. At the same time, however, all of the other commodities for which there are data available show increases, some of them very considerable.

Factors helping to explain the failure of production to meet domestic requirements for basic food crops are further depletion of the soil through failure to employ soil-conserving practices, increased consumption of food by the working classes, migration of farm labor to other industries and to public works, and the growth of the population.

A comparison of indexes of average yields for the seven principal crops grown in Mexico obtained on *edijos* and on private holdings is presented in Table II. There is relatively little difference between the level of production of the *ejidos* and the smaller private holdings having less than 5 hectares of land in most cases; but the *edijos* had considerably lower yields than the private holdings with more than 5 hectares. Explanations are to be sought in a variety of factors. First, in expropriation proceedings the

ex-hacendado was permitted to choose the land he wished to retain. It is reasonable to suppose that he would retain the best land. Second, since the crop lands of the *edijos* are generally operated in much smaller units than those of the *ex-hacendados*, there is less opportunity for utilizing farm machinery or for the rotation of crops. Third, as the *ejidatario* came from the most backward segment of Mexican rural society, it is hardly to be expected that he should suddenly be transformed into an efficient farm operator.

In addition to the *ejidos* the following types of private holdings exist in Mexico today.:

1. *Solares* (lots), land holdings of less than one hectare, constitute 17.6 percent of all landholdings and only 0.1 percent of the land in farms.
2. *Granjas* (small farms), holdings of 1 to 5 hectares, average 2.3 hectares in size and account for 15 percent of all holdings and 0.71 percent of the land in farms.
3. *Pequeña propiedades* (small private holdings) contain from 100 to 500 hectares and are usually old *hacienda* farmsteads. They make up 1.4 percent of all holdings and 7 percent of the area in farms.
4. *Ranchos* (literally cattle ranches), composed of 5 to 1,000 hectares, average 69.8 hectares

TABLE II—INDEXES OF YIELDS PER HECTARE OF SEVEN PRINCIPAL CROPS IN MEXICO: A COMPARISON OF THE EJIDOS WITH PRIVATE HOLDINGS, 1940
(based on fifteen sample states)

| Seven Principal Crops | Index of Yields | | | |
|-----------------------|-----------------|---------------|--|----------------------------------|
| | Total | <i>Ejidos</i> | Private holdings of 5 hectares or less | Private holdings over 5 hectares |
| Corn..... | 100.0 | 96.1 | 103.4 | 105.0 |
| Wheat..... | 100.0 | 86.5 | 89.0 | 123.0 |
| Beans..... | 100.0 | 94.9 | 50.7 | 113.4 |
| Cotton..... | 100.0 | 85.3 | 72.6 | 129.5 |
| Barley..... | 100.0 | 87.2 | 164.3 | 120.0 |
| Coffee..... | 100.0 | 61.9 | 71.4 | 144.7 |
| Bananas..... | 100.0 | 70.8 | 68.4 | 151.0 |

Source: Calculated from data from *Segundo censo ejidal* (1940) and *Segundo censo agrícola-ganadero*.

in area and account for 8.5 percent of all holdings and 7.9 percent of the land in farms. 5. *Haciendas* contain at least 1,000 hectares of land. In 1940 there were 9,679 holdings in this category, while, as pointed out earlier, 301 contained 40,000 hectares of land or more. *Haciendas* accounted for only 0.3 percent of the land holdings.

In 1940 *campesinos* (peasants or *peons*), including *ejidatarios* and private landowners with less than 5 hectares of land, accounted for 90 percent of all agricultural land holders in Mexico. Of the private owners of land, 10.2 percent owned more than 5 hectares, 1.9 percent owned more than 100 hectares, and 0.3 percent owned more than 1,000 hectares.

Not all of the problems relating to Mexican land tenure have been those of tenure *per se*. While redistribution of the ownership rights to the land has been a major goal in itself, it has not been a panacea for all agricultural ills. Government action in the field of land reform has been combined with irrigation proj-

ects to increase the amount of arable land, provision of agricultural credit facilities, tariff protection on agricultural products, encouragement of cooperatives, stimulation of increased production through price guaranties and subsidies, measures to improve the livestock industry, and numerous other services designed to improve agricultural techniques and raise the standard of living of the farm population.

It is still too early to make an adequate appraisal of the latest agrarian Revolution in Mexico. Any country emerging from a long and destructive revolution must pass through a period of social and political adjustment during which success or failure is not easily measured. At any rate the intolerable situation wherein 90 percent of the rural population had no land whatsoever while a small minority owned or controlled almost all the land resources of the nation has now been quite thoroughly liquidated.

Reports and Comments

Coordinative Planning and the Architect¹

RECENT articles by architects bear witness to a misunderstanding by at least part of the profession concerning its role in planning.² Reflecting an awareness of the physical disorganization and ugliness of contemporary communities, these articles advocate—directly or indirectly—the architect as “over-all coordinator” in city planning. In so doing, they evidence a misconception of coordinative planning; and they are mistaken in the assumption that education and experience in architecture constitute an adequate background for this type activity. There is need of clarification; otherwise, the effectiveness of each endeavor will be lessened, and educational miscarriages continue.

There was a day when planning, as a term and as a profession, was synonymous with city planning and the superficially aesthetic “civic design” or purely “architectural” approach. In large part, training was a mild elaboration or by-product of the curricula of schools of architecture and landscape architecture. This situation, of course, has not obtained for some time; the architectures have joined as partners with economics, sociology, public administration, geography, engineering, and other fields in the co-operative of disciplines perforce involved in planning. That this was inevitable is inherent in the nature of the planning process and the extent to which the problems it treats are interwoven into the variegated fabric of society.

Planning is not a simple extension of any one of the traditional fields of specialization. Nor do the integrative skills, analytical and

projectional in nature, which are essential to over-all planning, result osmotically from limited knowledge in a potpourri of fields. The uniqueness of comprehensive planning is evidenced by its distinctive: (a) underlying philosophy and approach, (b) theory, (c) principles, (d) body of substantive knowledge, (e) methodology of plan-making, (f) bibliography, and (g) instruments of operation and effectuation. Two of many possible illustrations, one theoretical and one practical, will perhaps highlight these singularities.

At the present time, priorities are a major theoretical concern of coordinative planning. Progress has been made in the techniques of planning for various elements of a master plan separately: traffic, parks and playgrounds, subdivisions, or public housing projects and public works. There remain to be developed, however, methods of analysis providing a more adequate comprehension of the complex of interrelationships involved in the master plan as a totality. Comprehensive planning includes a great many considerations, ranging from broad attitudinal or social aspects to highly specific engineering requirements. It is concerned with program elements of disparate nature, some of concrete type involving physical objects and material quantities, others dealing with services or satisfactions less readily measured. A technique of comparative evaluation in terms of some meaningful common denominator is

the dictionary definition of architecture to encompass the organization of all physical space is not accepted; among other fallacies, it rejects the engineer, geographer, economist, public administrator, sociologist, and ecologist. The concept of the architect as potentially the designer of society itself is dismissed as individually revealing, but fortunately not descriptive of the profession as such.

² E.g., Jerrold Loeb, “What Is Past Is Prologue”—Shakespeare. In, *Journal of the American Institute of Architects*, Washington, D. C., Nov. 1948. pp. 195-197; *ibid.*, Ernest Joseph Kemp, “Can We Separate Architecture and Planning?” Sept. 1948, pp. 99-101; “President Orr’s Dayton Speech,” Mar. 1948, pp. 104-5. Thomas H. Creighton, “P.S.” *Progressive Architecture*, July 1948, p. 136.

¹ In this discussion, no distinction is made between coordinative, comprehensive, and conjunctural planning; the terms are used interchangeably. They refer to the function of over-all or master planning for a particular organism. The single word planning is employed more generally to include—besides the coordinative function—planning for single elements of a plan, as conducted mainly by the appropriate fields of specialization; it may also refer to the broad endeavor of seeking improvement through organized forethought. Architecture is considered neither in the somewhat restricted sense of its dictionary definition, nor as broadly as some architects might prefer. Any extension of

required, if the relative effectiveness of different alternative expenditures or efforts for specific purposes is to be determined for the whole. In other words, for a given expenditure of time, money, and labor for current operation and planning activity for the short- and long-range future, what techniques can be devised to show more scientifically the best apportionment between such diverse activities as new highways, education, housing, fire and police protection, recreation, or welfare services—the criterion of “best apportionment” being that allocation which maximizes the benefits for the entire complex, in accordance with established objectives? In briefest outline, this describes a most important theoretical problem of planning, not of architecture.

The operative features peculiar to planning (practical illustration of its uniqueness) are evident in such instruments as the master plan, regional development program, capital budget, soil conservation, irrigation, or grazing district, urban or rural zoning ordinance, or official map; or in such techniques as regional surveys, area and land-use analyses, inclusive transportation studies, over-all economic and industrial surveys, or public works programs. It is clear that these are mechanisms of planning, not of architecture.

Although planning is of course applied at various areal and administrative levels, architects think almost exclusively of city planning, probably because this was the pioneer area of effectuation in the United States, and urbanism is so outstanding a national fact and focus. But there are also the county, state, regional, national, and even international levels, and it is to be noted that in these a synthesizing function for the architect is rarely advocated. The presence of relatively few buildings in the visual scene associated with these activities (and even fewer structures designed by the architect) may account for the absence of the positional claim made in city planning. It is more difficult for the architect to envisage himself as coordinator of county agricultural land-use and other rural planning, regional planning, or national efforts. And yet, the concentration of buildings in cities does not so basically alter the character of comprehensive planning for metropolitan regions that the architect can perform centrally in this instance and not in the others. The inconsistency springs from an incomplete comprehension of the planning

process, and a resultant misconception by the architect concerning his role.

Indeed, many architects seem to conceive of planning mainly in terms of an end-product of static, three-dimensional form; a lesser importance—even a lesser reality—is attributed to the dynamic socio-economic forces which are not less vital because they cannot be seen and touched as directly. Nor does there appear to be sufficient awareness of the import of planning as a continuing institutional undertaking, in which (borrowing an expression of Alfred North Whitehead), “the process itself is the actuality.”

Further development of the planning concept is to be expected, but it is sufficiently crystalized to indicate that personnel are needed who are not normally the product of any one of the various fields involved. Each specialization functions importantly in its area of concentration; but this precludes the integrative view, and the kind of training and experience required for conjunctural planning, which has its own sequence and content. This includes:

- (1) institutionalization of the planning function within the unity to be planned,
- (2) diagnosis of the parts of the entirety; analysis of their current role, trend, and potential contribution to the whole,
- (3) establishment of a quantification, and direction and rate of development of the whole (by study by resources, income, trends, historical factors, and future probabilities and possibilities),
- (4) projection of this entirety as a specific plan for the achievement of more immediate objectives, and as a continuously evolving plan for longer-range goals (in successive stages in budgets, various programs, land-use maps and models, physical arrangements, or legal descriptions),
- (5) adjustment of objectives in the light of considerations revealed by the above projection, and by appraisal of the consequences of the plan,
- (6) formulation of alternative programs to achieve the objectives as adjusted and approved (in terms of available resources and social usages),
- (7) adoption of plan and program (for a given period, subject to necessary change),
- (8) effectuation (in terms of expenditures, policies, various programs and activities, land use, construction, or legal implementation), and
- (9) continuous study, and periodic re-appraisal and re-formulation of the plan (to make recommendations relative to the execution of the current planning program; to reflect unexpected developments, modification or change of objectives; to maintain the longer-range plan as a tangible ex-

pression of objectives, and as an essential technical concretization).³

These difficult and highly technical procedures are indicative of the differences in nature, scope, scale, and substantive content between the work of coordinative planning and the contributory specialty. Each activity calls for distinctive education and full-time professional application.

Consider the usual training of the architect. He completes a crowded curriculum, so focalized that students have received the graduate degree without having taken a single course in geography or any of the social sciences—much less in planning itself. At best, an introduction to economics, sociology, or public administration is included as extra-curricula "broadening." Yet not a few alumni recommend still greater concentration: more work in architectural engineering, building materials, specifications, construction methods and supervision, and office procedures. This is hardly the education of persons for whom socio-economic processes must have the actuality of buildings and equal significance, and with which far more than a nodding acquaintance is needed. A few schools have less restrictive curricula, but in the light of the fundamental differences between comprehensive planning and architecture, the miss is as good as a mile.

The practice of architecture requires the organization and direction of an office, handling related business affairs, responsibility for the design and construction supervision of a variety of buildings, and keeping abreast of the constant flow of information pertaining to new materials, construction methods, and other matters. The architect can no more be an active practitioner in his own realm and also an effective planning coordinator than the educational, professional, and licensing separation of engineering and architecture suggests that he can serve both these masters.

It has been claimed that working with client, contractors, and others on larger projects represents coordinative experience fitting the architect for the role in planning which at least has adjectival similarity. If this were true for the architect, it would be valid for the civil engineer. It would also

apply to administrators, executives, and managers who are called upon to interrelate finance, supply, manufacture, research, sales or public and labor relations. The criterion of capability for conjunctural planning is not merely experience in the correlation of parts—common enough phenomenon—but what parts and what kind of integration for what purpose. The architect may be concerned with building finance, construction costs, and some land economics, but not with economic geography, employment and income groups, general economic analysis, social accounting, or over-all financial and budgetary planning. He is concerned with a limited sociology of the family and neighborhood, not normally with the sociology of larger organisms, ecology, racial and cultural relations, or social institutions in the broader sense. He has brief contact at best with geography and political science. The kind and methodology of the integration he practices are defined by the parts with which he deals.

To assume, as some do, that the creative is the special province of the architect involves not only warping of the dictionary definition of the word, but the rather questionable corollary that other fields are less creative. Is the *Republic* less creative than the Parthenon, Roman Law less than the Baths of Diocletian, An Act of Virginia for the Establishment of Religious Freedom inferior in this respect to Monticello, Hamilton's creation of the Federal Revenue Service a less unique contribution than L'Enfant's Plan, or the Brooklyn Bridge less a creation than the Robie House?

Coordinative positions in planning may indeed in the future be filled by "architects," but adequate performance necessitates the abandonment of the practice of architecture and evolution into a new identity. It is also true that such positions are now held by others for whom planning is ancillary to some more common specialization and primary interest. But the progress of planning in the United States during the last half-century reveals a growing awareness of its value as an instrument in public and private affairs. The increasing number of universities offering graduate degrees in planning reflects this progress and foreshadows the time when planning will be more widely incorporated as an institution and as a more distinctive function, with a corresponding advance in the significance of its activities and a parallel emphasis

³ Revision and extension of the methodology included in a memorandum of the Committee on Education and Research in Planning, The Division of the Social Sciences, University of Chicago, 1948.

on personnel trained in planning *per se*. A dual role will be possible for even fewer architects in the future.

The participation of the architectural profession is shown more precisely upon examination of the four broad categories of planning personnel now emerging: (1) coordinative, (2) divisional, (3) specialist, and (4) administrative. Coordinative planning personnel engage in the conjunctural process of forming the over-all plan and program; they are trained directly for this work, or may be otherwise educated and subsequently acquire this new training and identity. Divisional planning personnel are concerned with the integration of several closely connected fields or activities, preliminary to the process of top-level coordination; they are trained in coordinative planning, in the pertinent family of disciplines, or acquire such training after previous schooling in a single related field. Planning specialists are the product of a traditional area of concentration; they have stressed the planning aspects of the field, and have not only studied the making of particular plans which depend chiefly on this discipline, but have considered their incorporation into the master planning process. The architectural planning specialist participates at this point; his abilities are needed in the development of site and area plans, in the planning, scheduling, and supervising of building con-

struction, and in connection with the provision of better building environments in general—within a framework of specifications established by coordinative or divisional planning. The last category comprises those with managerial responsibilities relating to the translation of programs into operating realities; ordinarily, they are educated in coordinative planning with special emphasis on administration, or *vice versa*.

Quite obviously, master plans in a democracy are the antithesis of the type creation which can spring full-bodied from the head of an individual or small group. They are the image of the public will, technical symbolization of the objectives and aspirations of a societal group. They are the product of procedures involving all the people: the voting public, public and private representatives and officials, citizens with particular interest, skilled specialists. The personnel charged with the technical task of over-all integration and of continually forming the plan and program to achieve the established goals must of necessity work in closest collaboration. The coordinative task transcends personalities; the client is the body politic, and the "style" the client desires cannot be disavowed.

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Czechoslovakia's Law on Subdivision of Farm Holdings*

LAND reform has been a problem of crucial importance in many parts of the world during both of the recent postwar periods. Aside from the trend toward collectivization in the Soviet-dominated countries, the problem of land reform usually can be divided into two separate parts. Most attention ordinarily has been given to the limitation, breaking up, or expropriation of the larger farm holdings and estates. Also important is the problem of consolidating and

enlarging the often widely scattered and diminutive holdings of the small proprietors.

Czechoslovakia is one of the nations that has dealt with both aspects of this problem. Following World War I it undertook one of Europe's most extensive land reform programs. In continuing and extending this program after World War II, it has taken definite steps to break up all farm holdings involving more than 50 hectares.¹ At the

* This article is based on work and observations of the author while employed by the Food and Agriculture Organization of the United Nations in 1947. Any opinions expressed in it are those of the author and not necessarily those of the Department of Agriculture.

¹ The new Czechoslovakian Constitution recognizes the farmer's right to own and operate up to 50 hectares of land.

The Communist government, however, has encouraged and reserved lands for state and collective farms. It is assumed in many quarters that the government will eventually push a collectivization movement and thereby liquidate most, if not all, of its individual land owners. Czechoslovak officials on numerous occasions, however, have assured the farmers that the government will not violate the constitutional guarantee on private land ownership.

same time it has enacted an interesting law designed to prevent further parcellation of holdings. A brief description of the background and nature of this law follows.

The parcellation problem in Czechoslovakia, as in many other countries, is a problem of long duration. Inheritance arrangements, population pressure on the land, and heavy dependence among rural residents on non-farm employment have resulted in the creation of numerous small farm and garden units. According to the 1930 census, 28 percent of the agricultural undertakings involved less than one hectare of land, 44 percent less than 2 hectares, and 71 percent less than 5 hectares. A large proportion of the farm holdings, particularly in Slovakia and southeastern Silesia, are divided into numerous—sometimes as many as 50 or more—small, narrow, and widely divided strips.

Since the farming of these small and divided tracts is not conducive to production efficiency, government policy generally has discouraged the trend toward further parcellation. After World War I the government partly for this reason retained controls over the subdivision and transfer rights on its allotments of lands from expropriated estates. Also it started a commassation program with the purpose of encouraging peasant operators to voluntarily pool and reallocate their lands to give each operator a more compact farm unit. For the most part this program affected only a small area. More progress was made in discouraging the future subdivision of small holdings than in bringing the already divided holdings back together.

Following World War II the government expelled the bulk of its German and Hungarian population and at the same time confiscated the 2.4 million hectares of land that they had owned. Almost 1.5 million hectares of this land is suitable for farming and most of it has been allotted to Czechoslovak nationals with the government retaining certain controls over future alienation rights. Also as a part of the Hradec agricultural program, a law on the Indivisibility of Agricultural Land was passed in July, 1947. This law is specifically designed to prevent the further subdivision of agricultural land into small strips. Under the provisions of this law a farmholding can be divided on the death of its owner only when the resulting ownerships contain at least 5 hectares in the sugar beet

area, 8 hectares in the grain area, 10 hectares in the potato area, and 15 hectares in the forage crop area.² Only when the land is used intensively for such purposes as truck gardening, or hops or vineyard culture may permission be given for the creation of smaller units. In those cases where the legal heirs fail to agree on who is to take over the farm, the courts select the persons who will receive the farm or its subdivided parts. In making their selections the courts give priority to the older members of the family over the younger members and to close relatives over more distant kin. Where there are several heirs or prospective heirs, the courts also are directed to consider their capacity and ability for farming.

The law further provides that tracts of farm land may be subdivided and sold only when the resulting fields contain a minimum area of 0.5 hectares, are at least 15 meters in width and may permanently be reached by road. Farmers owning not over 50 hectares may sell land to their children, husband or wife, brothers or sisters, brothers-in-law or sisters-in-law. Other sales are permitted only when the buyer farms at least 2 hectares (a smaller minimum is permitted if the buyer is a truck gardener, operates a vineyard, or in some other way depends upon the intensive use of a small land area for his agricultural income), lives in the same or a neighboring community, and does not possess more than twice the 5, 8, 10 or 15 hectares of minimum area specified for the four respective type of farming areas. When rented land is sold the tenant has first priority for buying it.

Owners who want to sell land outside their immediate families must advise the District National Committee of their intentions. These committees then advise the public that the land will be sold. This gives all persons with a priority for buying land an opportunity to indicate their intentions before the land is sold. This law has been in operation for only a short period and it apparently carries the blessing of the present government. If it is

² Czechoslovakia has four crop production areas. The boundaries of these areas tend to follow the altitude contour lines of the mountains and valleys. The sugar beet area is found on the fertile lowlands lying less than 350 meters above sea level. The grain area, with wheat and barley as the main crops on the lower lands and rye and oats on the higher levels, goes up to 450 meters. The potato area (or grain-potato area) goes up to 700 meters and involves soils that are usually thinner and less fertile than those found at lower levels. The forage crop lands found above the 700 meter level are used mostly for meadows and pastures.

allowed to operate over an extended period, it will probably prevent both the excessive parcellation and concentration of agricultural holdings. It will also discourage, if not prevent, the inheritance or purchase of farm

land by nonfarmers.

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Rural Nonagricultural Planning and Zoning Authorized in Oregon

THE Oregon legislature enacted legislation in 1919 authorizing cities to appoint planning commissions and to enact zoning and land-use regulations. Oregon cities have made effective use of this authority in promoting orderly community development and growth. In the interim since 1919 the growth of suburban, industrial, commercial, and residential developments outside the incorporated limits of cities has brought with it problems of congestion and disorderly land use formerly found only within the city boundaries. With current rates of population growth (59.3 percent increase in the State of Oregon from 1940 to July 1949) the need for planning and zoning outside of cities has become acute.

In recognition of this problem, the Governor of Oregon appointed a special committee to investigate and report prior to the 1947 Oregon legislature. The committee examined fringe areas around Portland and other cities and rural settlements along state and county highways. They found a hodgepodge mixture of residential and nonresidential land uses. The areas were commonly characterized by lack of adequate sewage disposal and fire protection and lack of coordination with transportation development. After considering the recommendations of the committee, the legislature enacted a county planning and zoning enabling act, referred to as Chapter 537, Oregon laws of 1947. The act became effective on July 5, 1947. Under the provisions of this act, the county governing body (county court) of any county was authorized to establish and appoint a planning commission and to adopt subdivision regulations and building permit requirements. Authority of the court to adopt zoning and land-use regulations, however, was made subject to a favorable vote of the legal voters of the county in a county-wide election.

In the general election of November 2, 1948, the voters in Lane County, by a narrow margin, authorized the county court of that county to enact zoning and land-use regulations under the authority of this act. Thus, Lane County became the first Oregon county in which zoning and land-use regulation have been authorized under the provisions of the act. Lane County is a large western Oregon county extending from the summit of the Cascade Mountains to the Pacific Ocean. In point of population it is one of the fastest-growing counties in the United States. Forestry and agriculture are the principal basic industries. There are pressing urban fringe and rural settlement problems on the fringes of Eugene and Springfield and along main highways in the county.

In brief, the procedure for rural planning and zoning that may be established within a county under the authority of Chapter 537, Oregon laws of 1947, consists of the following:

1. Establishment and appointment of a planning commission of five, seven, or nine members by the county court. In addition to the appointed members, the county engineer, the county agricultural agent, the county assessor, and the county manager, if there be one, are ex-officio non-voting members.
2. Preparation and adoption of a county development pattern by the planning commission, after holding public hearings.
3. Submission to the county court of drafts of ordinances for the purpose of carrying out the development pattern.
4. Adoption by the county court of subdivision regulations, of building-permit requirements, and, after authority has been given by the voters of the county or a local area, of zoning and land-use regulations.

The act provides that if the voters in a county-wide election disapprove giving the county court the authority to adopt zoning

and land-use regulations, it is possible for the residents of a particular area of two square miles or over to obtain zoning and land-use regulations by petition to the county court.

The authority of cities to plan and to zone within city boundaries was not affected by this legislation.

A major limitation of the zoning and land-use regulating authority under Chapter 537 of the Oregon laws is that such authority cannot be extended to the use of land for grazing, agriculture, horticulture, or the growing of timber. However, under the state soil conservation districts enabling act the local governing bodies of soil conservation districts may adopt land-use regulations on lands used for agriculture. Certain governmental controls of the use of Oregon lands

for the growing of timber are authorized under state laws relating to the classification and taxation of forest lands and the regulation of forest practices.

The degree of success that Lane County will have in rural nonagricultural planning and zoning under the authority of this legislation and vote of the people will be closely watched by those who view it as a case experience under a new setting of the use of the sovereign power of the state government to limit personal liberties and property rights in the interests of promoting the public welfare, convenience, and general prosperity.

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Does Urban Planning Change Civic Attitudes?

IN a recent, well-documented and scholarly article¹ Miss Judith Tannenbaum circumspcctly stated the hypothesis that the "neighborhood unit is conducive to the reduction and ultimate elimination of urban anomie."² The concept of anomie as developed by Durkheim³ refers to the complex of psychological atrophy and unbalance in an individual caused by the loss of group recognition. The "atomized" individual of the big cities no longer "belongs." The feeling of belonging to a group, to be recognized, to have status, to fulfill a function in a social organism, to be needed, to share responsibilities, to have friends and neighbors is of great importance to human well-being. Man is a "zoon politikon" and social cohesion is not only socially or politically or technically important, but most of all psychologically.

Modern city planners believe that the careful planning of neighborhoods (self-governing population units of 2500 to 5000 persons, confined to an area that clusters around an elementary school within a radius of no more than half a mile) will prove to be a remedy against anomie, and Miss Tannenbaum's article splendidly collects all the material in favor of that theory.

This article tries to modify what this writer thinks are undue hopes. We are convinced that all urban planning must

start with the careful planning of neighborhoods, that indeed no better unit, no better starting point, no better goal for sound regional and urban planning can be found than the neighborhood.

The primary aims and effects of neighborhood planning, however, are safety, health, and convenience. Beauty, social cohesion and, perhaps, crime abatement are incidental results, secondary goals. This article does not deal with the primary aims and effects. There is no doubt that a modern neighborhood will work wonders for the health, safety and convenience of its constituents, neither will it be denied that planned neighborhoods will be more beautiful than our chaotic and confused present-day cities. The question of crime abatement, especially of juvenile delinquency, will not be discussed here either, because insufficient housing and lack of opportunities for wholesome outdoor recreation provide only a few of the many factors that make for crime or juvenile delinquency and cannot be separated sharply enough from such factors as crime stories, movie thrillers, alcohol, gambling opportunities, gangs, poverty, lack of education, racial or social discrimination, etc. The only question then that we shall investigate is: does neighborhood planning foster social cohesion to such a point that anomie will be eliminated?

¹ Judith Tannenbaum, "The Neighborhood: A Socio-Psychological Analysis, *Land Economics*, November 1948, p. 358.

² *Ibid.*, p. 369.

³ *Ibid.*, p. 358.

Anomie after all is a phenomenon of the big cities. There is very little anomie in small⁴ or even middle-sized cities and there is virtually none in villages. In this sense a prosperous village, especially one with some history, is of course the ideal neighborhood. The question in other words is: how can we convert the big cities into groups of small neighborhoods? Let us disregard for a moment the gigantic difficulties of re-organization, re-location and re-education, of the fight against vested political and real estate interests and against the innate conservatism of most people, and let us suppose that the goal were achieved in the fact that a big city has spread many, many miles beyond its present circumference and somehow has become a vast agglomeration of fairly independent neighborhoods. Would not all the neighborhoods soon either become dominated by a predominant racial, religious, educational or economic group, thus affording stability and a counteraction against anomie based on other reasons than those of participation in the administration of a neighborhood, or would they not, if they are mixed, be less stable, more transient in character, more shifting and changing in population and therefore more dependent on an impersonal, steady administration by experts, thus leading again to anomie?

The unbiased observation of the settlement in any big (or for that matter small) city shows that people of the same historical, racial, religious or economic background tend to cluster together. See the stratification of New York in such groups as the Germans in Yorkville, the negroes in Harlem, the Italians in Little Italy or the prosperity belt of lower Park Avenue as against the East Side tenements. Any independence granted to the separate neighborhoods would most certainly foster this crystallization process. Though a powerful antidote against anomie, it would restrict social mobility and, though effectively preventing anomie in the dominant group, would still work greater psychological havoc in the minority groups. The advocates of neighborhood planning speak only of the beneficial effects of social recognition, but forget to mention the undesirable corollary of social recognition, namely, social rejection and ostracism. Are we really psychologically ready to accept the healthiest signs of a truly cohesive neighborhood, gossip and censori-

ousness? And even where there are no dominant groups, is the participation in some form of local self-government enough to bring about social cohesion? Here is the dilemma: if the neighborhood exists long enough, a dominant group will emerge to provide eventually extra-political common interests, eventually even a common history. The fact that no dominant group will emerge will prove that the neighborhood is one of unsettled, shifting, transient population, thus *ipso facto* unable to provide the social cohesion (which needs some time to develop) necessary to combat anomie.

The healthiest neighborhoods in a psychological sense that our Western world has known were, aside from villages, the medieval towns. One has only to read the wonderful opening chapters of Lewis Mumford's *Culture of Cities* to realize what an abyss yawns between the civic attitudes of even the most integrated modern towns and the old medieval towns. Civic conscience and social cohesion will always arise where there is a need of a common defense, in catastrophes and emergencies, where a community is sufficiently insulated, where mobility is restricted and where extra-administrative interests are of overwhelming importance.

In a modern war the neighborhood, curiously enough, would be again a unit of defense, especially in the case of air attacks. For a number of reasons we neglect in time of peace to stress this aspect of the neighborhood and to provide against possible air or buzz bomb attacks by neighborhood manoeuvres under simulated emergency conditions. Such manoeuvres undoubtedly would have a beneficial effect on our neighborhood consciousness, though these beneficial effects might possibly be upset by the very unpleasant by-effects of war hysteria. It seems unlikely that we here in America will do much about civilian defense in peacetime to have an appreciable effect on neighborhood organization and cohesion. Military service as such does not necessarily provide for such a feeling of cohesion as the soldiers of today are no longer the all-round citizen-soldiers of by-gone days, but at best highly specialized members of different fighting organizations, utterly unlike in their training and battle or even manoeuvre experience. As for the inner defense against high-way robbery, theft, murder, kidnapping, rape, white slavery, dope smuggle, etc. a citizens' police

⁴ Cf., *Life*, July 12, 1948, pp. 115-120.

would be most certainly inadequate and the fight against such crimes has to be left to specialists. In fact, wherever citizens take the law into their own hands as in the case of lynchings we have to fight such outbreaks of misguided civic spirit, though they work wonders for an undesirable sort of social cohesion.

As to catastrophes and emergencies it may be said that modern engineering, modern sanitation and epidemiology, modern weather-forecasting, rapid communication and locomotion, efficient police and identification methods have reduced major catastrophes and emergencies from a constant or even periodical hazard to widely-spaced, irregularly occurring accidents, the fight against which again must be left to specialists. It may even be said that the few remaining sources of constant hazards (juvenile delinquency, traffic accidents, air and water pollution) are exactly those that in a well-planned neighborhood would either be reduced or completely eliminated and thus would not contribute towards a closer association between neighbors.

No community is any more completely insulated in these days of rural delivery, telephone, telegraph, news services, general literacy and ubiquitous traffic, neither does any, even the smallest community depend for its entertainment on local efforts. Radio, television, films, newspapers, magazines, and the easy accessibility of metropolitan centers provide constant extra-local entertainment.

Except in small towns and villages and rural regions the mobility granted by modern traffic and moving methods, the possibilities of easy sale-and-purchase of furniture and other goods, the growth of giant corporations with standardized, interchangeable positions, the fact that, according to Mumford,⁵ only two-fifths of the inhabitants of a modern city are producers against the four-fifths of medieval times, the disappearance of the small independent owner-producer, the enormous percentage of people in urban centers who live in rented houses or apartments, the even distribution of commercial outlets—all these factors tend to make our population restless and moving. Historical ties are virtually non-existent in urban populations, let alone in such limited groups as the Back Bay Bostonians; and the small families of our times make for even greater mobility.

The main factor, however, of social cohesion in the medieval town was the fact that all its citizens lived in a common world of inner drama and beauty, provided by their religion. Civic cohesion prompted by a banding together against an emergency or by participation in a common administration will exist only as long as the emergency exists, or as the administration is inefficient. There is no surer way to kill civic consciousness as a smooth, efficient, imperceptible administration. The fact that Germany never developed much civic independence was due in part to the fact that its administration on all levels was too efficient, gave too little cause for complaint and vigorous action.⁶

Let us then review all the factors that speak against a development of sound civic cohesion: a demand for privacy; the absence of emergencies; the lack of common defense measures; increased mobility; small families; the absence of historical or civic or sentimental ties; the lack of common religious experiences; the lack, consequently, of common ritual and pageantry; the extra-local provision of goods and entertainment; the stratification of our society according to race, religion, national background, wealth and education; and the ideal of success seen not in terms of social status in the community but in wealth or position or national notoriety.

The only counter-effects that a planned neighborhood can provide against these factors are the following: a common interest in the education and safety of children; the health, safety and convenience of the neighborhood; the common interest in the administration of this neighborhood where, however, the implementation of administrative policy must in a complex civilization like ours be left to experts; physical proximity with possibly congenial neighbors; common entertainment and instruction on some levels; an esthetical interest in the beautification of a particular neighborhood; and finally perhaps a competitive spirit in matters of sports, beautification, material progress and safety as compared to other neighborhoods.

It will be seen then that the high hopes that so many of our city planners pin on neighborhood planning as to its incidental effects, especially those of growth of social cohesion and civic consciousness, are of doubtful justification. The writer believes that wherever

⁵ Lewis Mumford, *The Culture of Cities* (N. Y.: 1938), p. 19.

⁶ Cf., H. G. Wells, *The Work, Wealth and Happiness of Mankind* (London 1938), p. 206; p. 612 seq.

anomie exists in our civilization its cure lies largely beyond the reach of urban planning. He advocates, however, urban planning in neighborhood units as the only way to achieve a maximum of safety, health and convenience. Neighborhood planning does not preclude social cohesion, in fact it provides the best

conditions for social cohesion and civic consciousness, but it does not necessarily create them.

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Book Reviews



Road to Survival. By William Vogt. New York: William Sloane Associates, Inc., 1948. pp. 335. \$4.00.

This best-seller by an ornithologist, who also is chief of the Soil Conservation Section of the Pan American Union and has world-wide travel experience, is a forceful piece of propaganda for the no longer entirely new idea that soil-conservation practices by farmers are needed on many parts of the earth, and for Margaret Sanger's idea that mankind must be saved by birth control. Soil erosion and over-population are treated as the imminent universal threat to the survival of man.

It is a truly amazing book, not for the knowledge or wisdom it offers the reader, but for its psychological appeal, the emotional reactions it generates, the laudatory reviews it gets from literary critics, and its phenomenal sales. It is akin to the propaganda film, "The River," and is another literary stunt like *Plowman's Folly*, but it treats a far bolder scope of problems and uses more reckless strokes of a thick pen. The general public consumes it as "scientific" knowledge, absorbing it as easily as smoking a cigarette. Any man who knows something about farming, land utilization, or the economics of resources and has any critical faculty or plain common sense will be moved to anger by it and may want to throw it into a wastebasket.

Writing deliberate propaganda, the author feels that the good end of conservation justifies any and all means—such as distortion or wholesale omission of most pertinent facts. In order to prove the point that soil erosion is destructive and that conservation is needed, and to get attention by writing something that will widely sell, the author uses a certain technique. He knows that in this nervous age of movies, radio, and television after a gruesome war, the general public will not read a careful account of the complex subject of erosion, depletion, and conservation or of

the far more involved question of population growth in relation to resources.

But people will read scandals; the bigger and more incredible the scandal, the more fascinated they will be. They read crime novels and detective stories that have villains in the plot—the more respectable the persons to be unmasked the better. And one can get attention, as Orson Welles proved with his radio play about invasion from Mars, by frightening people. The more gloom and disaster, the better.

So Mr. Vogt concocts a story that has plenty of scandal, crime, heinous cruelty, ruthless exploitation, and sentimental glorification of poor victims. It beats Edgar Allan Poe in sending shivers down the spine of the innocent reader who wants this thrill. It proves to him that the real plot is against him and all his fellow men and that the villains have almost inescapably trapped him.

The villains are the old stand-bys of all left-wing radicals: the white man; the rugged individualist; the free-enterprise system; the capitalistic system; the lumberman who uses an axe; the railroads which contribute the Dust Bowl and the destruction of the forests to modern living; and some new ones: the farmers who use moldboard plows; the people who produce children and rear them; and the doctors, chemists, and biologists who reduce mortality and thus help families in over-populating the world. It is the story of the beautiful fertile wilderness, with its ecological balance, gradually and senseless destroyed by the white farmer and "industrial man—the great illusion."

While the book is written in the style of lyrical fiction, which it actually is, certain scientific trimmings are attached which impress the non-professional reader as much as the quack's white laboratory uniform impresses the gullible patient. The author operates with a formula according to which the "biotic potential" divided by the "environmental resistance" equals the earth's theoretical carrying capacity for people.

The author never gives a clear definition of his "biotic potential." Does it include the

potential irrigation of desert land where the carrying capacity for man was nil before? Apparently not, since he says that the biotic potential cannot be increased except locally in narrowest limits. He also implies that land as such produces food by itself, while it is an axiom of the utilization of all natural resources that they can produce, i.e., create, value only by the application of management, labor, and capital to them.

It is asserted that man has reduced this practical carrying capacity and that "the practical ceilings in most of the world" are "dropping lower every year." (p. 22) "Whether man likes it or not, he must live within his means and these are shrinking" is the main theme. The overwhelming evidence to the contrary does not bother the author. In the United States the production of 100 million tons of corn, sufficient to supply at least 500 million people with all the caloric food energy they need, is the foundation for the gigantic production of meat, fats, and eggs. Yet we learn from Mr. Vogt that "corn . . . like syphilis, has been one of the most potent contributions of the New World to civilization. It is probable that corn, under modern methods of cultivation, has caused more misery than the venereal disease." (p. 33)

Short sketches prepare the setting for the reader. There is a story about a dust storm (whether it blew from the ecologically balanced desert or not is not explained) and a drought in Australia; one about a Mexican woman who transports her family's water supply a distance of 10 miles in a container on her head; another about a member of Parliament who won the battle for socialization but is baffled by exhausted coal resources; one about a president of a small American college, burdened by four children, who pays out one-third of his income for taxes and whose lot is multiplied by "that of tens of millions of other American workers, and it added up to a greater force of slave laborers than had ever struggled under the Nazi lash in Europe" (p. 8); another story about an American lumberman in Hawaii who "was buying the city's water supply and he knew it. But he had a lumberman's conscience with calluses so thick that he no longer felt even cynical about these deals" (p. 9); one about Jewish refugees on a ship bound for Palestine, "a worn-out desert that once had been a rich landscape" but "man's abuse had wrung

most of the life out of it" (p. 10); another about a Chinese in a famine march; and another tale about a medical research man who discovers that in the test tubes of his laboratory was confined a power perhaps more dangerous than that of the atomic bomb because, Mr. Vogt says, its results keep more people alive to live more miserably (p. 13).

Indeed, it is implicit in the author's references to the failure of industrialization as a solution that it would have been better if the Europeans had never reached out with their parasitic industrial development into new lands (pp. 59, 69 ff.). In other words, had the American continent been left to the Indians, native mammals, and birds, the ornithologists' golden calf—the ecological balance—would still be undisturbed.

Later in the volume, all the continents are surveyed in a similarly summary and eccentric fashion.

Mr. Vogt's book is a bad book which will sink into oblivion as deeply as its sales have skyrocketed. It is a thoroughly bad book because it deliberately conceals the main part of the truth about man and his environment and distorts the phenomena of man-made erosion by exaggerating their part in human history out of all proportion. Nowhere in the book is any proper consideration given to irrigation, or drainage, or terracing, or contour plowing, or wood-burning field rotation, or the restoration of plant nutrients by mineral and organic fertilizer, including the mining of nitrogen from the air, or of the achievements of breeders and geneticists. To omit these manifestations of man's creative genius through the ages indicates either stark ignorance or an attempt at historical fraud.

Road To Survival is an immoral book because it is based upon confusion about the moral foundations on which any decent society which respects human dignity must stand, and because it ignores man's task on this earth and treats him chiefly as a disturbing element which upsets the beautiful balance of nature in the raw. It is immoral also because it treats the power of procreation and the responsibility that it involves as essentially something that has to be stopped by mechanical devices so that the overburdening of the supposedly declining carrying capacity of the earth may be avoided. This aspect is even labored to the point of obscenity: he would save mankind from imminent disaster and a

coolie level of living, and his beautiful wilderness from being cluttered up with human beings, by means of contraceptives. In his adoration of the primitive and the savage the author feels that the tsetse fly was a blessing for Africa, and that those who fight it are criminals subjecting the land to over-grazing and over-population.

The author's political views are interwoven throughout the text. In speaking of Russia he states: "The application of scientific methods might be advanced by a dictatorship which can impose sound land-use practices on people who would ruin the soil under a system of 'democratic free enterprise,' as has been done over millions of acres in the United States;" (p. 232). As a post-caution, he adds, "but this is far from certain."

This is a distasteful book because it talks down to the reader. It is an irresponsible book because its author generously passes economic judgment while proving conclusively that he never understood the basic issues of the creation of wealth and the struggle against poverty.

With all these defects, *Road To Survival* can be recommended for directed reading and for seminars of graduate students in courses on economic geography, agricultural economics, economic history, and related fields, chiefly for shock treatment with a horrible example. It is stimulating for this purpose because the fallacies, mis-statements of fact, distortions, and logical as well as factual scientific errors are abundant.

Beyond this, the book deserves several books as answers to all the nonsense it contains, simply because the basically unsound main thesis of impending catastrophe as the result of universal abuse of land resources and of rapid over-population has profoundly impressed even men of otherwise good judgment. This is reflected by Mr. Bernard Baruch's foreword and the weight some of the great foundations and legislators give to such ideas as those set forth by Mr. Vogt. Mr. Baruch startles the agricultural economist by stating apodictically: "The productivity of much of the earth, through man's mistreatment of it, has fallen to such an extent that what one man-hour of labor could formerly produce, now requires ten, fifty or even a hundred man-hours." (p. ix).

Mr. Vogt's best-seller is the work of a naturalist who broke into the social sciences and went berserk. Social scientists should

consider it their duty to restore some order in the minds of Mr. Vogt's followers, and agricultural chemists, biologists, and geneticists should pitch in also.

The publishers claim on the dust-jacket that *Road To Survival* is "a revolutionary new view of the world . . . which will deepen your understanding of history and change your entire thinking about the future of man." This reviewer grants that it is revolutionary—not in its moss-grown idolatry of of nature but chiefly in the deliberately obstreperous presentation of what the author calls "an adequate image." The author perorates on p. 114. "Unfortunately, our forefathers . . . were one of the most destructive groups of human beings that have ever raped the earth." All this book calls for is a healthy portion of indignation on the part of the mature reading public.

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Germany—Key to Peace in Europe. By Karl Brandt. Claremont College Press, 1949. pp. 109. \$2.75.

In the brief span of 109 pages Professor Brandt develops a thesis which runs somewhat as follows: (1) there are good and bad Germans, (2) the good Germans have always bulked large in the total population, (3) the good Germans now control the provisional government of the Western Zone, and (4) this government should be welcomed into the North Atlantic community of nations on an equal footing and with complete political sovereignty.

In support of this thesis Professor Brandt recounts numerous acts or signs of German good will. For example, he leaves the impression that a little support of the underground opposition to Hitler from Washington or London in the sad days of appeasement could have toppled that cruel dictatorship. This the reviewer doubts. In another instance he asserts that near the end "most of the German people were convinced that the Nazi leaders were insane, and prayed on their



A Survey of Contemporary Economics. Edited by Howard Ellis. Philadelphia: The Blakiston Company, 1948. pp. 490. \$4.75.

This book is an undertaking to outline and appraise the developments in economics in the past fifteen years. Its thirteen essays, written by thirteen different economists, each with the aid of two critics, cover the following subjects: value and distribution, business cycles, monopoly power, price and production policy, fiscal policy, international trade, monetary theory, national income, labor, dynamics, econometrics, and the economics of socialism and of capitalism. It follows from this array of subjects that the planners of this collection were thinking of economics as political economy in the main. This is highly significant in view of the fact that this collection was planned by a committee of the American Economic Association. How much longer it is going to take what is called "economics" today to broaden out to include private affairs instead of just public affairs is difficult to anticipate. After all, it is only a few decades since the departments of economics in our universities were called departments of political economy.

Such broadening is greatly needed. We spend our lives mostly as firms, or families, or single individuals, producing and consuming goods and services. If economic science is to serve humanity as, for example, we expect chemistry and medical science to serve it, it must become much more, relatively, an economics of private production (including marketing) and consumption, and less a science of the affairs of state.

It might be offered in defense of the selection of the material for this book that it was intentionally limited in coverage to "pure" economics as distinguished from "applied," but public economics is only one form of applied economics.

All told, in one place or another in the volume, there are perhaps a dozen pages of what may be called production economics theory, particularly in Abram Bergson's essay on "Socialist Economics" under the guise of marginal productivity, and in Joe Bain's "Price and Production Policies," which after all is nearly all price policy. Bain's attention to production is mostly in terms of cost-output

knees that American and British troops would deliver them from their German tormentors." Such a statement does not square with historical fact, unless he has reference to the final weeks of hostilities when Germans seemed to prefer deliverance by the British and Americans to deliverance by the Russians. The fighting ability of the German soldier and the productivity of the German worker even during the bleak winter of 1944-45 would indicate that the German people supported their war effort with high morale. In short, this reviewer does not like the thesis which Professor Brandt develops.

But it is unimportant here whether this reviewer likes or dislikes the line of reasoning developed in the little book, *Germany: Key to Peace in Europe*. The important question is—Why does Professor Brandt argue so strongly for a free and completely independent Germany now. As an economist he finds that Western Europe cannot be restored to economic health until the heavy industries and technical "know how" of Germany are employed to capacity. With this there can be little disagreement. He then argues that "Germans will not fulfill the economic expectations of Western Europe" unless as a people they are politically free. This may or may not be correct. But even if it is, it does not follow that it is best for the Western Community of nations to once again turn the German nation loose. It may be better to worry along with some economic problems than to permit a resurgence of the warlike spirit and acts of the German nation.

This reviewer accepts as a tragic fact something that Professor Brandt deplores, namely, "The Occupation Statute of the Western powers considerably improves the situation, but even under it the German people in the West State will be treated as a nation with a criminal record that has been put on probation." Full economic recovery or no, the German people do possess a criminal record and must be treated accordingly.

Whatever your views, however, the little book merits reading. It forces the reader to think, and think hard, concerning American foreign policy toward Germany. How and in what way do we (or do we) want to bring Germany into the emerging community of nations bordering on the North Atlantic?

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and price-output relations. What little attention the economics of marketing receives is mostly under the head of "market structure," also in Bain's essay.

Consumption economics? By all means—but solely in the mechanical terms of the demand function, and the narrow and stilted terms of the Keynesian consumption function.

As one would expect, the most characteristic feature of this survey is its great preoccupation with Keynesian economics. There are 82 references to Keynes in the Index of Names and only 24 to Marshall. The essayists seem to be in the process of masticating the Keynesian dogma, and in some instances, spitting out large chunks of it. We shall have to wait another decade or two to see how much of it is likely to be fitted into this century's structure of economic science.

Accepting this collection of essays for what it is and not what it purports to be, the level of performance is high. Perhaps only in the fields of economics that are included in this volume are to be found economists who can think and write at this level. If this be the truth, alas for the role of economics in human affairs in the decade ahead!

JOHN D. BLACK

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Production and Welfare of Agriculture. By Theodore W. Schultz. New York: The Macmillan Company, 1949. pp. 204. \$3.00.

The aim of this book, largely a collection of previously-published articles, is "to untangle the economic strands" of American farm policy, the objective of which is called "vague in conception." This is attempted by applying a peculiar terminology to old and well-understood ideas.

The principal term used, "allocative" efficiency, refers to the neo-classical tangled pure competition theory of "economic" efficiency under which an age-old confusion is maintained that people "produce" values rather than goods and services. Using this concept the author considers that he has debunked popular "folklore" when he concludes that American agriculture is "inefficient" (pp. 50-51), even though "agri-

cultural production per worker in 1944 was 35 percent above 1939 as compared with an increase of 33 percent for industrial production" (p. 106).

The outcome of the book in terms of suggested price policy is to "place more of the task of price making than is now the case upon privately organized institutions. . . ." (p. 184), or to establish prices "which achieve the desired output" (p. 187). Equilibrium economists have offered these suggestions repeatedly ever since farm prices became a matter of public concern.

The most amazing conclusion is that "the price-making mechanism is not an appropriate apparatus for lessening the inequality in the personal distribution of income" (p. 183). Who, among those who framed farm price policy, ever thought it was? If they thought so, what was the meaning of WPA, FSA, REA, etc?

In this reviewer's opinion, there was much less confusion in the minds of those responsible for existing federal farm programs than the author of this book seems to think. When they said agriculture had too little bargaining power, they meant it was producing too much of some commodities. That is at least part of what the author means when he says agriculture is "inefficient."

The difference of opinion concerns practical remedies rather than terminology for causes. The author attempts to apply the certainties of pure theory to probabilities they do not fit, while those he opposes are applying a practical theory to the world in which we live.¹ Although his analysis of his concepts leaves little doubt as to his convictions concerning what the "price mechanism" should do, he seems uncertain as to what it actually does. For example, he appears to argue against Secretary Brannan's proposal for relatively high farm prices "when the industrial-urban sectors are operating at a high level of employment and production" (p. 182) on the ground that under full-employment conditions low farm prices will induce "the transfer of labor and capital out of farming." But on page 94 he says, "Is it not an economic paradox to see people leave agriculture as farm prices advance and as farming becomes more profitable? Yet, such are the facts of the last twenty-five years."

¹ For a more extended discussion of this issue, see my article: "Theory, Definition and Purpose," *Journal of Farm Economics*, August 1949.

The author is primarily concerned with resource allocation,—a secondary objective in the minds of those he calls confused. Evidently, he wishes to see labor move out of agriculture at an even faster rate than usually occurs when nonfarm employment opportunities exist; and believes that the best way to speed up such an out movement is to lower farm prices. Because of his belief in the efficacy of prices as resource allocators, he would seem to regard as undesirable (and, therefore, anti-social) the principal effects of agriculture's present alliance with government in bargaining with the rest of the community for prices that yield an income substantially higher than the "minima" he would provide in his discussion of "welfare." The chances for a continuation of these effects, however, are improved by the author's observation that agriculture's decline in political power is lagging behind its decline in population (p. 108).

BUSHROD W. ALLIN

U. S. Department of Agricultural Economics



Simplified Appraisal System. By Ivan A. Thorson. Los Angeles, California: Realty Research Bureau, Inc., 1949. pp. 288. \$5.00.

This is a treatise on real estate valuation procedure and land economics. It is well worth reading and should have a place in the library of all appraisers and others interested in the economics of real estate. The author reviews and emphasizes the fundamental aspects of real estate and indicates the changes that have taken place in our economy. He stresses particularly that the value of capital goods lies in the future and that, because of the behavioristic nature of the science of economics, it is impossible to definitely predict future utility.

Of particular interest to appraisers is the author's "One Basic Approach to Valuation." He points out that the idea of the so-called "three approaches" has gained headway in recent years, and that they are alleged to be "cost, sales and income." But these in his opinion are merely historic facts which every good appraiser will include in his fact finding program. As Mr. Thorson sees it there is only

one logical approach to "value finding"—that is the factfinding program, which will include the data usually associated with the so-called three approaches among many others. The factfinding program includes three suggested steps. The first step is "gathering the data," the second, "analyzing the data," the third, "arriving at an estimate of or opinion of present value."

The chapter on "Market Value" of land is particularly stimulating. The author, after explaining and pointing out the essential requisites of a market, indicates that real estate has no market in the sense that homogeneous goods have. Real estate, he says is heterogeneous in character; that is, no two parcels are exactly alike and therefore in a strict sense it cannot have a market; hence no market value. This situation has caused a great deal of confusion as evidenced by the following quotation from the chapter on market value: "There are twenty different definitions of 'Market Value' of land in the statutes of as many states. This is not so strange in view of the fact that definitions are sought for something which actually does not exist."

The confusion on the market value concept has found its way into the courts which, in the author's opinion, have often defined as "Market Value" something which is plainly designated as utility or use value.

Mr. Thorson, however, has great respect for the judiciary and believes it has done remarkably well. The fault he believes is in our laws which, in many respects, are obsolete traditions and, in the light of the advances made in valuation practice, need thorough overhauling. The author shows by illustration the attempts to establish economic "law" by court action and points out that buyers, lenders and investors pay little attention to values "determined" by law.

In this treatise depreciation is treated somewhat differently from many other authors on this subject. Physical depreciation is called "tangible;" functional and economic obsolescence are called "intangible" depreciation. The author mentions depreciation thru decline in prices of materials, and the changes in the buying power of the dollar. This apparently indicates that he does not start with cost-of-reproduction new, because these two phenomena would already be accounted for in the change in cost. Mention is also made that, generally speaking, land is subject

to "intangible" depreciation only. This statement (which is not explained) also indicates that the author's concept of depreciation is different from that of many recognized appraisers. The author writes at length on the handling of future depreciation and points out the difference between amortization and depreciation.

In chapter X, "The Jones Brothers Buy an Apartment House," the author demonstrates the appraisal of the value of an apartment house in clear and understandable language. He brings out something which many appraisers overlook; that is, that land also has many risks and that therefore it must, under certain conditions, be capitalized at a comparatively high rate.

More space is given to a discussion of leases than to any other single subject. In seven short chapters lease problems interesting not only to appraisers but also to owners and tenants are discussed in scholarly fashion.

It is quite apparent that the author is very displeased with our system of ad valorem taxation. He not only mentions it critically in several places but writes an entire chapter captioned, "Our Absurd System of Ad Valorem Land Taxation."

After a short chapter on condemnation procedure the author gives several interesting demonstration appraisals on several different types of property including industrial, airport, farm and downtown business real estate, followed by some miscellaneous observations. There is also included a few of the more commonly used annuity tables. There are a number of chapters on urban growth and neighborhood trends followed by discussions of "The Practice of Appraising," and the "Appraisal Report." Interesting and illuminating footnotes are disbursed copiously throughout the treatise.

Simplified Appraisal System, in your reviewer's opinion, is a book interesting and informative not only to appraisers but also to owners and tenants of real estate, to lawyers and all students of land economics.

H. O. WALTHER

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National Transportation Policy. By Charles L. Dearing and Wilfred Owen. Washington, D. C.: The Brookings Institution, 1949. pp. 448. \$4.00.

It is a coincidence that the authors' treatise on national transportation and the recent

report by the Secretary of Commerce to the President upon a *Unified and Coordinated Federal Program for Transportation* have appeared almost simultaneously. For both put major emphasis upon the lack of coordination in governmental promotional activities as applied to our national transport system. Both studies discuss, also, conflicts between federal promotion and the national policies followed in regulating different techniques of transport. These problems deserve much more attention than they have yet received.

The current volume is divided into three parts. One part deals with promotion, one with regulation, and the third considers the organization of federal agencies. Of these parts, two describe difficulties and defects in present practice, and the third proposes substantial changes in governmental structure. The discussion is aggressively critical, but broadly based, well documented, and informing.

The fundamental contention of the book is that the government has been preoccupied with the individual problems of individual transportation agencies and has failed to view the transportation problem as a whole. It is argued that this has led to wasteful capital expenditure. The authors further believe that it has produced subsidy and price arrangements which have caused traffic to distribute itself between agencies without much attention to the real costs involved in transportation. This is waste in another sense.

The comprehensive remedy proposed is the concentration of federal authority in two divisions. There should be, that is to say, a "transport regulatory commission." This should exert regulatory authority over all forms of transport controlled by federal law, but it should have no promotional or administrative responsibility. There should also be a secretary of transportation, with cabinet rank, with administrative and promotional duties. The secretary should advise Congress with respect to (1) the physical needs of the transportation system; (2) the priority of these needs; and (3) the costs and the desirable methods of defraying these costs. The details of these proposals are elaborately discussed.

The authors have written a book from a point of view which needs to be expressed. The same subject is usually treated under the head of "coordination." The basic principle of coordination is that those agencies and

methods are to be encouraged which will supply users with service with the greatest economy of effort, usually expressed in terms of cost. This principle is sound. The danger is that it may be unduly qualified by recognition of the interests of the suppliers themselves or by reference to real or alleged conditions of competition, vested interest, future development, regional advantage, and the like. There is bound to be debate about these intangibles, and there has been some confusion even with respect to coordination itself. The time has clearly come to examine in detail federal policy in these matters, with attention to criticisms developed in the text. The reviewer notices that the Secretary of Commerce, in his report, does not mention the possibility of a secretary of transportation, which the authors recommend. This may be too much to expect. The Secretary of Commerce does, however, throw all caution to the winds when he observes, first that there are some advantages which might accrue from the consolidation of the regulatory function under unified control and, second, that the desirability of effecting such consolidation is likely to increase with the passage of time.

STUART DAGGETT

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Wartime Economic Planning in Agriculture. By Bela Gold. New York: Columbia University Press, 1949. pp. 594. \$6.75.

In the words of the author, "This is a study of economic planning in action. It is concerned with the problem of increasing the effectiveness with which available resources are applied to the task of maximizing the Nation's output of needed goods and services. The analysis is focused on wartime mobilization in agriculture. . . ." The task thus set by the author is comprehensive and on the whole well done. But one might wish, in line with the opening "focus," that the exposition were more clear-cut and concise throughout the five major parts into which the whole is divided.

The initial part, "Strategic Tasks in Agricultural Mobilization," includes chapters on the wartime challenge to economic planning and food shortages abroad. Professor Gold

believes strongly that the adequacy of the production effort in war-mobilized agriculture should be measured against "authoritatively estimated practical potentials" rather than against past performance or estimated war needs. Indeed, food needs for war and postwar are estimated as having been way beyond the highest production potentials.

The second part, "Agricultural Production in the United States," deals with agricultural output, and with utilization of land, livestock, agricultural manpower, farm machinery, fertilizer, and other productive resources. Mobilization achievements are appraised by comparing actual wartime production with the 2-year potentials estimated under assumed conditions as set forth in the report, *Maximum Wartime Production Capacity in Agriculture*. (U. S. Department of Agriculture, June, 1943, Preliminary—for limited administrative use). Professor Gold concludes from this unpublished internal report that food production in 1945 would have been 28-33 percent larger than in 1940 if the necessary measures had been put into effect. The actual increase was only 18 percent, and a part of this is attributed to unusually favorable weather. The report also showed that food supplies, measured in food nutrients, could have been expanded still more if production and consumption patterns had been modified to include more of the products that have high outputs of nutrients per unit of resources. He concludes that advances "in the scale and composition of farm output during the years of the war must be noted as exceedingly modest whether measured in comparison with urgent needs or with practicable potentials."

The needs of our Allies, our military forces and our domestic civilian population, and related price policy are discussed in the third part, "Distribution of United States Food Supplies." The view is expressed that "success of our domestic food mobilization efforts lay not in how high civilian consumption levels could be raised at home but rather in the scale of our aid to food deficit areas" (p. 297). Significantly, shipments of food from the United States did not increase after 1943 despite expansion in foreign requirements and a rise in per capita civilian consumption to record high levels in 1944 and 1945. The discussion points out that rationing plans and programs should have been developed and put into effect earlier and continued longer. Price policy is criticized

as unnecessarily inflationary and as not providing the relationships between prices of farm products required for maximizing output of food nutrients.

Long before reaching the fourth part, "Adequacy of Agricultural Mobilization," the author has concluded that the contributions of economic planning to the war effort were not fully utilized. Technical experts provided reasonably accurate information about production potentials and future needs. These could have been the basis for effective food programs. But he thinks that decisions of responsible officials were based alternately on concern about surpluses and shortages throughout 1944-46 when the actual situation was one of continuous shortages, not at home, but abroad.

All of the foregoing provides a setting for the fifth and final part, "Conflicting Pressures

and Practical Economic Planning." Failure to achieve mobilization objectives was not due to uncertainty about what they were or should have been, the author says, but rather to the failure to have them fully accepted by administrative officials, interested pressure groups, and the general public. The final chapter on requirements for more effective planning will interest social scientists who look forward to seeing their research findings put into use.

Professor Gold has presented a useful account of events on the food front and an evaluation of wartime planning in agriculture which deserves the attention of both administrators and research workers.

RAYMOND P. CHRISTENSEN

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Natura Non Facit Saltos[†]

"Soil Conservation in the USSR," A Reply by Dimitri Pronin*

IN the November 1949 issue of *Land Economics* there appeared a series of articles under the general title of "Soil Conservation in the USSR."¹ These articles are based on the findings of the Russian Research Center² and pay special attention to the law of October 24, 1948, which seeks to raise productivity in zones of low precipitation. Among those persons contributing to this series are George B. Cressey, Naum Jasny, Dov Ber Krimgold, N. Y. Nuttonson, and Solomon Schwarz.

The publication of this series of articles is commendable indeed and on the whole informative and thought-provoking. I take exception, however, to some of the statements made by Mr. Dov Ber Krimgold. In writing on "Conservation Plan for the Steppe and Timber-Steppe Regions" it seems to me that his own statement that the United States "must be in possession of true facts and of unemotional appraisals and evaluations of facts"³ is not adhered to in his article. The article considers two different aspects of the conservation program of the Union of Soviet Socialist Republics, the scientific and the ideological.

1. *The Scientific Aspect*

The scientific basis for the conservation plan is that shelterbelts of trees have a

local beneficial effect on climate at the surface of fields near the shelterbelts. The forest shelterbelts are to be used in areas where "the frequently recurring droughts and sukhovei (dry winds) cause considerable damage to agriculture in the Steppe and Timber-Steppe regions of the European part of the USSR."⁴

In addition to forest shelterbelts, the conservation program also includes suitable crop rotations, proper systems of management, application of organic and mineral fertilizers, careful selection of seeds, and development of irrigation. Each of these measures is sound in the light of modern agricultural science, provided it is applied to land which has adequate agricultural possibilities. The real question is whether or not such a conservation program can be expected to produce satisfactory results in the face of an extremely unfavorable climate.

We read that Soviet scientists themselves are not in complete agreement on this question. Naum Jasny reports that the results of the experiments of Scientific Research Grain Institute for Southeast, i.e., the very area primarily involved in the law under discussion, were negative. He also says that the effect of grass on the succeeding crop is disastrous with respect to moisture and that experiments in the

through June 1953, "to study Russian institutions and behavior in an effort to determine the mainsprings of the international actions and policy of the Soviet Union." (p. 333)

³ *Ibid.*, p. 337.

⁴ *Ibid.*, p. 342.

[†] Old Latin saying ("Nature makes no jumps").

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¹ This journal, pp. 333-364 (November 1949).

² Established by a grant of funds from the Carnegie Corporation of New York for the period from February 1948

United States have yielded the same results. He also pointed out that when Y. T. Ryasanov, director of Institute and Professor Doyarenko, Supervisor of the work, reported the findings in the USSR they lost their jobs.⁵

But, as in the case of Copernicus in the middle ages, burning of the scientist has not changed the truth. The measures against Ryasanov and Doyarenko will be of little help to strengthen the scientific basis for the entire enterprise.

The observations made in the section "Comments in Summary"⁶ betray grave doubts as to the possibility of changing climatic conditions. The statements made by Derwent S. Whittlesey on precipitation in semi-arid regions and by S. M. Schwarz on the difficulty of changing the macro-climate with the help of shelterbelts seem to me to be quite sound.

In the work of Paul O. Rudolf and S. R. Gevorkiantz of the Lake States Forest Experiment Station, U. S. Forest Service, under the title, "Shelterbelt Experience in Other Lands,"⁷ with reference to conditions in Russia's Steppe region we find this statement:

"Information as to the effect of shelterbelts on yields of agricultural crops is available from several experimental stations established in Steppe areas. Rather uniformly, the data point to large and significant increases in yields from shelterbelt protected areas as compared to yields from lands exposed to the full rigors of the Steppe, although grain crops may occasionally show the opposite trend. While the grains are largely benefited by protection in extreme seasons, they sometimes yield less in a normal season in the presence of shelterbelts."

Mr. Krimgold himself has some doubts concerning a question which is fundamental to the entire program, namely:

"whether or not crop rotations with perennial grasses and legumes are likely to increase yields in areas with an annual rainfall of 12 to 16 inches."⁸ The data (so far as they are at my disposal) on annual precipitation at meteorological stations which are located on or between the lines of projected shelterbelts make the entire picture even more discouraging: At Astrachan Station the yearly average is 6.6 inches, at Guriev Station, 6.35 inches.⁹ Finally, Mr. Krimgold has stated that: "most hydrologists, climatologists and even some foresters in the U.S.A. and elsewhere reject the idea that vegetation has any appreciable effect on climate generally and on precipitation particularly." Another question raised by Mr. Krimgold concerns the degree of probability of survival of the trees in the shelterbelts in these areas, where they are most needed.

Therefore, we see that a conservation program, based on some hoped-for radical change of the climate, is not the great achievement Mr. Krimgold pictures¹⁰ but a very doubtful enterprise, which cannot compare with less impressive but quite realistic reclamation programs in the United States. The Soviet conservation enterprise can be planned and ordered by the Council of Ministers and the Central Committee of the Communist Party, in a country where freedom of thought and speech are suppressed but Nature does not always respond to orders of the state and the party. So much for the scientific aspects of the proposed conservation program.

2. Ideological Aspects

With regard to the politico-economic aspects and "political thinking of the

⁵ *Ibid.*, p. 357.

⁶ *Ibid.*, p. 363.

⁷ *Possibilities of Shelterbelt Planting in the Plain Region*, Washington, D. C., Government Printing Office, 1935, p. 73.

⁸ *Land Economics*, November 1949, p. 343.

⁹ *Yearbook of Agriculture*, Washington, D. C., 1941, pp. 667-680.

¹⁰ *Land Economics*, November 1949, p. 338.

leadership of the Soviet Union," the author lists 5 concepts of which the first one is the most important. It reads:

"*Concept No. 1.* In the view of the Communist Party, abundance (sufficient goods and services to meet everyone's needs)—the prime prerequisites of communism—can be achieved only in a planned economy. If this ultimate goal is to be achieved rapidly and if a planned economy is to function properly, production in all branches of the economy must be at the highest possible level—and what is equally important—it must be predictable and controllable. It therefore follows that everything possible must be done to eliminate or drastically reduce the wide fluctuations in crop yields in the most important agricultural areas."

On the basis of my personal observations of the Soviet program in Poland during the war and on long acquaintance with Russian affairs I believe that this main ideological concept is now for export purposes only. I base this belief on Stalin's own words. In the eleventh volume of Stalin's works, published at the end of 1949 in honor of his 70th birthday, we find, in his speeches of 1928-1929, a frank admission that the Soviet government intends to exploit the peasants "temporarily." (The majority of the people in the Soviet Union are peasants.) Stalin explains that the fast industrialization of England in the 19th

century was based on exploitation of colonial peoples; that of Germany on the immense tribute paid by France after the war of 1870. For the leadership of the Soviet Union there is left:

"only one way to develop industrialization and that is by means of savings within the nation. The sources of wealth are, first the working class, which creates the real values and operates industry, and, second the peasantry. With the peasantry our program takes this form: The peasantry pays to the state not only the direct and indirect taxes but *overpays* [italics, by Stalin] through high prices for industrial articles. Furthermore, the peasantry *does not receive the entire price* [italics by Stalin] for the agricultural products. That constitutes an additional tax on the peasantry. It is a kind of tribute, kind of overtax, which we must take temporarily."¹¹

This concept of militant communism preparing the world revolution and collecting resources by means of ruthless exploitation of the majority of the population of the country which it dominates through collectivization (collectivization is primarily militarization of agriculture) seems to be very far from the idealistic aim of providing "sufficient goods and services to meet everyone's needs," which Mr. Dov Ber Krimgold gives us as concept number one.

¹¹ J. W. Stalin, Moscow Grosizd, Complete Works, 1949, Vol. II, p. 158.